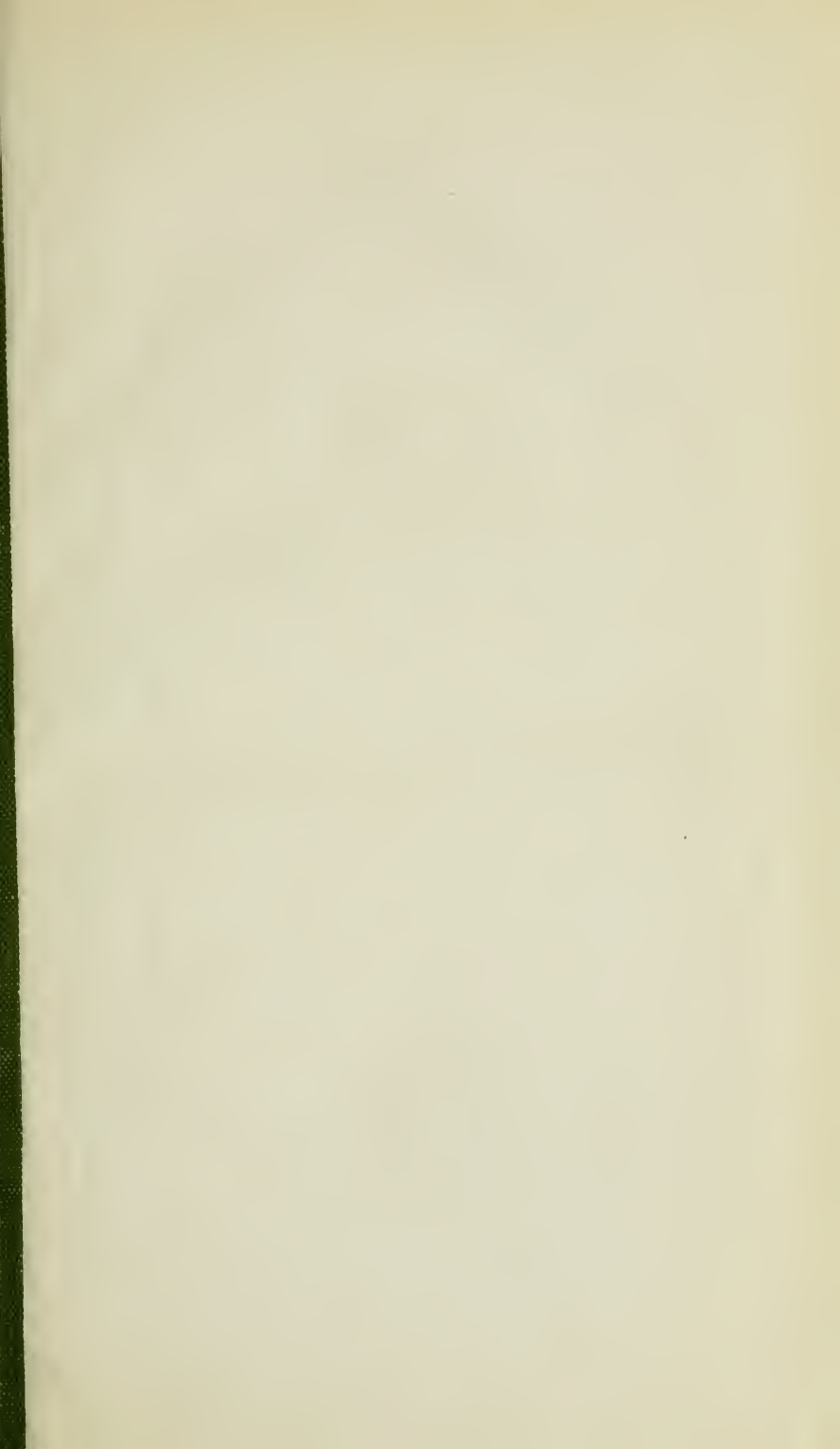


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LONDON MEDICAL GAZETTE.

NEW SERIES.

VOL. I.

FOR THE SESSION 1842-43.

LONDON :
PRINTED BY WILSON AND OGILVY,
57, Skinner Street.

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THE
London
MEDICAL GAZETTE;

BEING A

Weekly Journal

OF

MEDICINE AND THE COLLATERAL SCIENCES

Handwritten notes:
VOL. 31
(Sept 1842 - March 1843) 58
NEW SERIES.
427 258
29.8.44

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LONDON:

PRINTED FOR LONGMAN, BROWN, GREEN, & LONGMANS,
PATERNOSTER-RROW.

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THE LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, SEPTEMBER 30, 1842.

KING'S COLLEGE HOSPITAL REPORT FOR 1841;

With Remarks.

By WILLIAM AUGUSTUS GUY, M.B. Cantab.

Professor of Forensic Medicine, King's College,
London, and Physician to the King's
College Hospital.

(For the Medical Gazette.)

IN the MEDICAL GAZETTE, Feb. 19th, 1841, an analysis was given of 4250 cases registered in the books of the King's College Hospital during the previous year. The period embraced in that report was less than nine months, as the hospital was not opened for the reception of patients till April 15th, 1840. The present report is for the entire year 1841.

The number of registered cases exceeds 8000, which is probably about 2000 short of the entire number treated at the hospital during 1841, exclusive of casualties; of which number, under a complete system of registration, by far the majority might have been entered upon the books. The cases omitted from the report are almost exclusively in-patients; and of these the larger number are physicians' cases, the urgent cases admitted under the care of the surgeons having been carefully registered during the latter part of the year. Of the medical and surgical out-patients a very small number have been omitted, consisting chiefly of cases about which some doubt existed at the time of their first application, the name of the disease not having been subsequently entered.

The only change in the medical staff during the year 1841, which may have

affected the number and proportion of the patients, is that caused by the appointment of Dr. Arthur Farre to the care of the Diseases of Women and Children.

From what has been stated, it will appear that the report is by no means so complete as might be wished, and that it conveys an imperfect idea of the prevalent diseases of the poorer classes in one of the most crowded parts of the metropolis. The proportionate frequency of those diseases which are not sufficiently severe to be admitted into the wards of an hospital, or which are excluded by the rules of the establishment, is, however, faithfully represented; and, as far as this class of patients is concerned, it is hoped that the report will supply some useful information*.

Analysis of 8029 Registered Cases of Disease, treated at the King's College Hospital, during the year 1841.

	Male.	Fem.	Tot.
Febris continua . . .	12	15	27
— intermittens . . .	3	2	5
— ephamera . . .	11	14	25
— dentitionis . . .	19	8	27
— infantum remittens . . .	69	69	138
Catarrhus . . .	70	122	192
Catarrhus epidemicus, in- fluenza . . .	78	145	223
Pertussis . . .	28	35	63

* I am happy to state that an efficient plan for registering the in-patients of the hospital has just been adopted; so that there is every reason to expect a more full report for the present year, and a complete account of all the cases treated at the hospital during the year 1843. I may mention, also, that a sub-committee of the Statistical Society has been formed, for the purpose of promoting an improved and uniform system of registration in the hospitals of London; and that their proposals have been favourably received, and their objects promoted, by the medical officers of many of those institutions.

	Male.	Fem.	Tot.		Male.	Fem.	Tot.
Variola	7	6	13	Diseases of the pharynx	0	1	1
Varicella	8	5	13	----- larynx	1	0	1
Rubeola	5	10	15	Bronchitis	122	253	375
----- sequelæ	3	0	3	Pneumonia	9	1	10
Scarlatina	6	8	14	Pleuritis	2	1	3
----- sequelæ	2	4	6	Dyspnoea	2	4	6
Erysipelas	10	21	31	Tussis	35	54	89
Struma	53	51	104	Asthma	1	4	5
Cachexia	1	4	5	Phthisis	237	122	359
Mollities ossium	7	4	11	Hæmoptysis	10	17	27
Debilitas	15	20	35	Emphysema	7	2	9
Purpura	6	1	7	Diseases of the heart	12	10	22
Plethora	0	5	5	Hypertrophy	3	3	6
Podagra	38	12	50	Palpitation	6	6	12
Anasarca	2	12	14	Aneurism of the aorta	1	0	1
Ascites	0	7	7	----- arteries	1	1	2
Cedema	1	4	5	Dyspepsia	60	213	273
Muscular Rheumatism	171	142	313	Gastritis mucosa	13	69	82
Pleurodynia	36	73	109	Gastrodynia	1	6	7
Articular Rheumatism	40	32	72	Hæmatemesis	4	8	12
Epilepsy	16	11	27	Organic disease of stomach	1	0	1
Chorea	5	8	13	Gastro-enteritis mucosa	7	26	33
Hysteria	0	25	25	Diarrhoea	82	96	178
Hydrophobia	1	0	1	Melæna	2	6	8
Convulsions	1	3	4	Tabes mesenterica	2	0	2
Syncope	1	1	2	Dysentery	2	3	5
Delirium tremens	2	2	4	Constipation	71	252	323
Drunkenness	2	2	4	Colic	1	0	1
Impediment in speech	14	3	17	Colica pictonum	10	0	10
Diseases of the spine	3	4	7	Tormina	4	5	9
Hemiplegia	5	2	7	Hæmorrhoids	10	16	26
Paralysis	9	6	15	Prolapsus ani	6	1	7
----- agitans	0	1	1	Stricture of the rectum	0	1	1
Wasting of the muscles	2	0	2	Peritonitis	1	0	1
Weakness of the limbs	3	12	15	Vermatio	4	1	5
Neuralgia	6	26	32	Ascarides	20	38	58
Hemicrania	1	4	5	Tænia	6	10	16
Sciatica	3	0	3	Lumbrici	1	6	7
Pain in the feet	3	3	6	Diseases of liver	2	1	3
Melancholia	4	6	10	Icterus	5	4	9
Imbecillitas	2	6	8	Diseases of the kidney	4	0	4
Dementia	1	0	1	Hæmaturia	0	1	1
Spectral illusions	1	0	1	Diabetes	1	0	1
Loss of memory	0	1	1	Cystitis	2	1	3
Determination of blood to				Irritable bladder	4	0	4
the head	11	8	19	Dysuria	5	4	9
Apoplexy	2	0	2	Incontinence of urine	1	9	10
Vertigo	7	13	20	Retention of urine	1	0	1
Cephalæa	45	111	156	Calculus	1	0	1
Hydrocephalus	3	4	7	Gravel	0	3	3
Disease of brain	2	1	3	Syphilis	105	79	184
Cynanche tonsillaris	19	24	43	Gonorrhœa	230	147	377
Tonsillitis	11	25	36	Bubo	64	23	87
Relaxed uvula	0	2	2	Swelled testicle	65	—	65
Laryngitis, acute & chronic	4	4	8	Excoriations	25	4	29
Cynanche trachealis	1	0	1	Condylomata	11	10	21
Cynanche parotidea	3	10	13	Hydrocele	9	0	9
Bronchocele	1	3	4	Varicocele	3	0	3
Ulcer of tongue	2	2	4	Stricture	21	0	21
Diseases of the salivary glands	2	0	2	Other discases of male			
				organs of generation	51	0	51

	Male.	Fem.	Tot.	<i>Diseases of Females.</i>			
Secondary syphilis . . .	48	43	91	Anæmia, chlorosis . . .		27	
Periostitis . . .	12	9	21	Hyperlactatio, mimosis inquieta . . .		35	
Diseases of bone . . .	11	4	15	Amenorrhœa . . .		87	
——— teeth and gums . . .	9	11	20	Irregular menstruation . . .		5	
——— joints . . .	61	55	116	Dysmenorrhœa . . .		7	
Diseases of the eye and its appendages . . .	78	84	162	Menorrhagia . . .		64	
——— ear . . .	12	10	22	Leucorrhœa . . .		70	
——— nose . . .	8	4	12	Purulent discharge from the vagina of children . . .		9	
Skin diseases (unnamed) . . .	38	43	81	Pregnancy . . .		9	
Strophulus . . .	0	1	1	Abortus . . .		4	
Lichen . . .	4	11	15	Diseases of the vagina . . .		2	
Prurigo . . .	3	4	7	Prolapsus uteri . . .		30	
Lepra vulgaris . . .	3	19	22	Organic diseases of uterus . . .		6	
—— syphilitica . . .	9	13	22	Diseases of the mammæ . . .		12	
Psoriasis . . .	6	11	17	Ovarian dropsy . . .		1	
Pityriasis . . .	0	2	2	Change of life . . .		13	
Urticaria . . .	13	14	27	Puerperal fever . . .		1	
Roseola . . .	3	0	3	<i>General Abstract.</i>			
Erythema . . .	3	4	7		Male.	Fem.	Tot.
——— nodosum . . .	1	3	4	Febrile affections . . .	290	410	700
Pemphigus . . .	0	1	1	Contagious exanthemata . . .	41	54	95
Impetigo . . .	2	1	3	Hooping-cough . . .	28	35	63
Porrigo . . .	61	75	136	Struma, gout, &c . . .	120	97	217
Ecthyma . . .	3	2	5	Dropsies . . .	3	23	26
Scabies . . .	109	87	196	Rheumatic affections . . .	247	247	494
Herpes . . .	10	16	26	Convulsive diseases, &c. . .	42	55	97
Rupia . . .	1	3	4	Paralytic affections . . .	22	25	47
—— syphilitica . . .	0	5	5	Neuralgic affections . . .	13	33	46
Eczema . . .	11	17	28	Mental disorders . . .	8	13	21
Aphthæ . . .	9	19	28	Diseases of the brain . . .	70	137	207
Acne . . .	2	6	8	——— throat, la-			
Lupus . . .	1	2	3	——— rynx, &c. . .	44	71	115
Nævus . . .	1	3	4	——— lungs . . .	425	458	883
Phlegmon . . .	60	67	127	——— heart and			
Abscess . . .	57	59	116	——— arteries . . .	23	20	43
Anthrax . . .	8	14	22	——— stomach . . .	79	296	375
Ulcers of the leg . . .	135	128	263	——— intestines, . . .			
——— other parts . . .	61	56	117	——— including worms . . .	228	461	689
Fistula in ano . . .	7	10	17	——— abdominal . . .			
——— in perineo . . .	1	0	1	——— cavity . . .	1	0	1
Varicose veins . . .	4	10	14	——— liver . . .	7	5	12
Tumors . . .	12	20	32	——— urinary or-			
Malignant tumors . . .	3	7	10	——— gans . . .	19	18	37
Glandular enlargements . . .	17	19	36	Veneral diseases . . .	500	263	763
Enlarged and inflamed bursæ . . .	16	31	47	Other diseases of male organs of generation . . .	84	0	84
Hernia . . .	26	7	33	Diseases of bones, joints, teeth, &c. . .	93	79	172
Malformations . . .	12	16	28	——— the organs of sense . . .	98	98	196
Wounds . . .	78	46	124	Skin diseases . . .	293	362	655
Burns and scalds . . .	35	29	64	Inflammation and its consequences . . .	329	334	663
Contusions and sprains . . .	225	174	399	Tumors, &c. . .	90	110	200
Concussion . . .	6	2	8	Accidents and external injuries . . .	430	300	730
Dislocations . . .	6	7	13	Attempts at suicide . . .			16
Fractures . . .	76	39	115	Diseases of females . . .		382	382
Other accidents . . .	4	3	7				
Attempts at suicide . . .	—	—	16				
				Total,	3627	4386	8029

REMARKS.

Catarrhus Epidemicus, Influenza.—

This disease was extremely prevalent during the months of February, March, and April. Extreme debility, accompanied in most cases by languor and mental depression, was superadded to the ordinary symptoms of catarrh, and in many instances, more especially in aged persons, this symptom of debility was the only one present. In a few cases a papular eruption appeared on the skin, and minute ulcers formed, which healed with difficulty. In addition to these cases of influenza, a large number of cases of common catarrh are reported.

As the date of the commencement of the attack of influenza was carefully ascertained and noted down in all the cases which came under my notice, it may be interesting to show the period at which the epidemic attained its greatest intensity. The first case recorded began on the 8th of February, and the last on the 25th of April: the greatest number entered, as beginning on any one day, was on the 12th and 15th of February, on each of which days eleven cases were recorded. The numbers occurring in each week, from February 8th to April 25th, inclusive, are as follows:—

Feb.	8 to	Feb. 14	inclusive	37	cases.
	15	"	21	"	35
	22	"	28	"	33
March	1 to	March 7	"	35	
	8	"	14	"	20
	15	"	21	"	10
	22	"	28	"	7
	29 to	April 4	"	12	
April	5	"	11	"	5
	12	"	18	"	5
	19	"	25	"	8

It appears, then, that the influenza continued without abatement during the three last weeks of February and the first week of March, that it subsided considerably during the following week, and that it progressively declined till the end of April.

The milder cases were treated by Dover's powder, in the dose of ten grains every night, with occasional aperients; the more severe ones by stimulants and narcotics in combination.

Scarlatina.—One case, which occurred in a boy of sixteen, was the mildest which I have yet witnessed. The eruption ap-

peared on one day and disappeared on the next, but without being followed by a single bad symptom. On the day before the eruption, the pulse, in the recumbent posture, was 120; on the day of the eruption, and in the same posture, 116; on the following day 59; and on the two succeeding days 55. It rose to 102 on the seventh day; and in less than a week from that time the boy was admitted into the hospital labouring under anasarca. This low frequency of the pulse is, I believe, an unusual symptom at so early a stage of the disease. The number of the pulse in health, as afterwards ascertained, was about 82.

Struma.—The greater number of cases entered under this head, in this and in the former report, were cases of enlarged cervical glands. Cases of strumous ophthalmia are entered under the head of diseases of the eye; and other scrofulous affections as diseases of the organs implicated.

Podagra.—Some cases, entered under the head of articular rheumatism, belong perhaps more properly to this head.

Ascites.—One case of ascites, occurring in a female, is recorded as having come on immediately after a journey, during which she had to retain her urine rather more than fifteen hours. From that time she made but little water, and began at once to swell. At the time of application there was distinct fluctuation. Her general health was good. The patient was lost sight of.

Pleurodynia.—Many cases of this form of muscular pain, which have presented themselves among the outpatients, were mistaken for pleurisy, and treated by blood-letting. This error has been committed from want of attention, or from ignorance of diagnosis.

The absence of dulness on percussion, the effect of motion and of slight percussion with the points of the fingers in increasing or reproducing the pain, and the absence of all urgent constitutional symptoms, serve to distinguish this comparatively unimportant affection from the severe disease with which it is too often confounded. Under the head of Pleurodynia are included some cases of muscular pain in the abdomen, a form of disease occasionally confounded with peritonitis,

as pleurodynia with pleurisy. The diagnosis, though simple, requires more caution than where the seat of the pain is over some resisting part. Gradual and cautiously increased pressure either relieves, or does not increase, the pain; whilst the slightest percussion with the points of the fingers reproduces the pain, and often occasions the most excruciating agony. The pain is also increased or reproduced by motion. There is one circumstance which is apt to mislead us in applying pressure, and that is, that whilst the hand is still upon the abdomen, some sudden and catching effort of respiration takes place, and, by throwing the muscles into action, produces pain, which an inattentive observer might attribute to the pressure. In applying pressure, therefore, it is necessary to watch the respiratory movements, and to continue the pressure till the respiration becomes perfectly tranquil. Here, as in pleurodynia, the absence of severe constitutional symptoms will materially assist our diagnosis.

The connection of an irritable state of spinal marrow with these muscular pains is very general; and percussion over the spinal processes will generally produce, or increase, the pain in the muscles supplied by nerves from the part which is struck. In some instances, on striking the spinous processes of the several parts of the canal, from above downwards, severe and sudden muscular pains have been produced in the neck, chest, and abdomen, successively. These pains are generally, but not always, confined to one side.

These muscular pains, and the accompanying spinal tenderness, are the last and middle links of a chain of causes and effects, of which the first link is usually found in irritation of the mucous membrane of some of the outlets of the body; as the mucous membrane of the large intestines, of the bladder, or of the vagina. The sequence may be thus stated:—irritation of one of the mucous membranes, spinal irritation, reflected muscular pain. The frequency of this combination should always lead the practitioner to examine the spine when severe muscular pains of the chest or abdomen exist; and, whether spinal irritation be present or not, to inquire minutely into the state of the functions

of the alimentary canal, uterus, and urinary organs. Attention to this class of diseases will amply repay the practitioner.

The treatment must be adapted to the compound nature of the malady. The muscular pain, where it is extensive, may be relieved by opiate fomentations; when confined to a limited spot, by the emplastrum belladonnæ: the spinal tenderness may be subdued by leeches and the tartar-emetic ointment; and the cause of the disease by careful attention to the state of the organ originally affected.

This class of affections is not generally understood, nor is the simple mode of diagnosis here pointed out generally practised. Had it been generally known and used, there is good reason to believe that we should never have had such an unphilosophical term as "false peritonitis" added to our medical nomenclature. I would hazard the opinion that false peritonitis is nothing more or less than severe muscular pain, which is very likely to arise after the violent exertions to which the abdominal muscles are subject during delivery; and the fact that these pains often disappear under the administration of a full dose of opium adds confirmation to this opinion.

Though the diagnosis of muscular pains of the chest and abdomen offers no difficulty provided the examination be made with the ordinary care, and though the treatment is as simple as the diagnosis, it must be borne in mind that severe muscular pains of these parts may be the accompaniments or forerunners of other more serious affections. Muscular pain in the side may be the consequence of violent efforts at coughing, or the forerunner of herpes zoster, as well as an idiopathic affection; or it may precede, or be mixed up with, pleuritis. Pain of the abdominal muscles, again, may arise from violent efforts to vomit, or from extreme distension of any part of the abdominal parietes with flatus, or from repeated efforts to evacuate the bowels, or from similar efforts during parturition.

In all cases, then, it is necessary not merely to ascertain the nature of the pain, but to inquire into its antecedents and accompaniments. The treatment will then present little or no difficulty.

Articular rheumatism.—In the case of a man, aged 40, who had had repeated attacks of the disease, each attack was preceded by a discharge from the urethra resembling that of gonorrhœa. There was no reason to believe that the patient had had repeated attacks of true gonorrhœa.

Chorea.—One case of this disease, occurring among the out-patients, was cured by simple purgatives alone.

Paralysis.—One case of paralysis of the facial nerve of the left side, occurring in a male, aged 25, first seen November 16, was discharged, cured, December 2, after abstraction of blood by cupping to the back of the neck to the extent of $\text{ʒ} \text{iv}$., followed by bleeding from the arm to the same amount, and a blister behind the ear. The only medicines given were simple aperients. The paralysis was succeeded by an herpetic eruption over the entire surface.

Melancholia.—One case of melancholia presented a character which is not uncommon, and which, when heightened and confirmed, constitutes a form of moral mania. The patient, a married woman, $\text{æ}t.$ 45, in consequence of anxiety of mind, had fallen into a state of extreme depression of spirits, accompanied by constant apprehension. She stated that whatever crime she heard of, or read of, she felt a strong temptation to commit, accompanied by an equally strong fear of committing it; and that it was impossible to state the dreadful things that entered into her mind. She added, that any violence, of tongue or hand, to her children, or any one about her, would be a great relief to her, and that she had the greatest difficulty in restraining herself. The patient gradually recovered by taking a combination of dilute sulphuric acid, tincture of opium, and digitalis, with infusion of quassia; the bowels being kept open by gentle aperients.

Cynanche tonsillaris.—This disease in its early stage is accompanied by a frequency of pulse greatly disproportioned to its severity. Thus in a man, aged 25, about thirty hours after severe shiverings and pains in the back and limbs, the pulse was, standing 148, sitting 140, and lying 132. Respirations, in the recumbent posture, 28. The pulse, in this disease, as at the outset of all marked febrile affections, is full, soft, and quick.

Tonsillitis.—Cynanche tonsillaris and tonsillitis are here distinguished. Cynanche tonsillaris is a severe febrile affection with a local inflammation; whereas common inflammation has nothing of a febrile character, but is a simple local complaint. Under this term the relaxed sore-throat is included, as also those cases which cannot be distinctly traced to a syphilitic source.

Bronchitis.—Two cases of bronchitis senilis occurred in men who had passed their ninetieth year. One of the two stated that for the last seventy years he had taken neither beer nor spirits, and had lived constantly in London without a single interruption of his health. His employment was that of an heraldic draughtsman and engraver: he had had two wives, and twenty-two children.

Phthisis.—The report confirms the statement of last year as to the excess of males afflicted by this disease. One case illustrates the necessity of not trusting to the senses where an accurate measurement can be made. A lad, $\text{æ}t.$ 20, received a stab on the right side of the chest, followed by consolidation of the lung of that side. The appearance of the chest was remarkably deceptive: the right side appearing the larger, but being in reality the smaller by half an inch.

Asthma.—In one case of spasmodic asthma there was considerable tenderness in the upper part of the dorsal vertebræ, and the fits were preceded by a degree of flatulence unusual even in this disease.

Palpitation.—In one case the palpitation followed an attack of gout: there was no bruit. The pulse in the erect position was 150, sitting 146, and lying 140: respirations lying, 29. In another case the pulse was 166, sitting. The slight effect of change of posture, which I have already pointed out as occurring in phthisis pulmonalis, is probably present in all cases of increased frequency due to an irritable state of the muscular structure of the heart itself. I have reason to believe that the frequent pulse of consumption is due to this cause, and not to the existing febrile state of the system. It will be seen that in the case of cynanche tonsillaris already alluded to, the effect of change of posture on nearly the same frequency of pulse was double that occurring in the case of palpitation.

Gastro-enteritis mucosa, the so-called

English cholera.—One of the most severe cases which I have witnessed occurred in a man æt. 40. When he first presented himself he vomited and purged every three or four minutes; had violent cramps of both extremities, with the most acute pains, especially in the calves of the legs; and the hands were violently contracted, the fingers being forcibly bent upon the palm. He had been ill for fourteen days, but his symptoms had reached their acmé two days prior to his application at the hospital. He was ordered to take nothing but milk gruel for one or two days, and a draught consisting of mucilaginous mixture, with twenty drops of tincture of hyoseyamus, three times a day. On the second day he was much better; and from that time rapidly recovered. The majority of cases of this disease require nothing more than a strict farinaceous diet, with stimulants and narcotics, if great debility is present.

Constipatio.—In one case (that of a female aged 40), as many as sixteen days were passed without relief, and on many previous occasions a week or ten days; but, nevertheless, the tongue was but slightly furred, and the chief complaint was debility.

Colica pictorum.—This disease occurred in one instance in the person of a fishmonger, whose hands were constantly moistened with the brine in contact with the lead-covered counter. The blue line was distinctly marked on the gums.

Tabes mesenterica.—The small number of cases of this disease which have been entered on our books is a subject of great congratulation. If my recollection of the diseases occurring amongst patients of the same rank of life twelve or thirteen years since may be depended on, I have reason to believe that this formidable disease is becoming more and more rare: at any rate, the present uncommon occurrence of this disease, and of other severe diseases of infancy, contrast strongly with Fordyce's vivid description of the 30,000 children in London and Westminster labouring under hectic fever in its worst form, with emaciated bodies, tun-bellies, swollen hands and feet, and distorted limbs. Seven cases of hydrocephalus, two of tabes mesenterica, and eleven of mollities ossium, in upwards of 8000

patients, is a very favourable catalogue of the severe diseases of infancy.

Icterus.—Among these nine cases there was one well-marked case of icterus infantum. The child was born on Thursday night, at ten o'clock, and the disease made its appearance on Saturday at noon. The skin was universally of a deep-saffron hue, the conjunctiva slightly discoloured, and the face deeply tinged with bile; the urine of a natural colour. The mother was free from the disease. The complaint disappeared in four days under the use of minute doses of hyd. c. cretâ, and castor oil.

Incontinence of urine.—Three cases of this disease occurring in young persons have fallen under my notice during the last year, and one during the present, all of which have been promptly relieved, and ultimately cured, by tincture of cantharides in combination with tincture of opium or hyoseyamus. The only case reported as occurring in the female happened in a girl, aged thirteen, who applied for advice April 1st. She stated that she retained her urine well in the recumbent posture, and at night, but had no power over the sphincter in the erect and sitting postures. She was ordered—

Tinct. Cantharidis, ℥ij.; Tinct. Opii, ℥v. quater quotidie; Pil. Rhei c. gr. v. o. n.

15th.—Has improved regularly and rapidly, and during the last three days has been free from the complaint. She was ordered to continue the medicines to prevent a relapse, and on the 4th of May was discharged cured.

Another case occurred in a boy, æt. 15, who applied Nov. 23, 1841. He stated that he could not retain his urine longer than an hour at a time, and that he was obliged to rise three or four times in the night to void his urine, and that he frequently passed it in bed unconsciously. Ordered—

Tinct. Cantharidis, ℥ij.; Tr. Hyoseyami, ℥x. quater quotidie.

27th.—States that about five minutes after taking each dose of the medicine, he feels a cutting pain in the bladder, which lasts about five minutes. He holds his water three hours instead of one, and gets out of bed once instead of three or four times. He has ceased to pass his urine unconsciously.

RESEARCHES ON THE DISEASES OF THE HEART AND ARTERIES

Dec. 2d.—Still continues to retain his water better by day, but is again disturbed more than once during the night. Ordered

To take three drops of the Tincture of Cantharidis, and fifteen drops of the Tincture of Hyoscyamus, every night, and to continue the former dose throughout the day.

7th.—Continues better in the day; but in the same state at night.

13th.—He is now obliged to get out only once during the night. He was ordered to continue the medicine, and before the end of the month was discharged quite cured.

The same result has followed the use of the same remedies in the third case of last year, and in the one treated during the present year.

Eczema rubrum.—One case, occurring in a shoemaker, aged 51, was treated by antimonio potassio-tartras in the dose of an eighth of a grain in combination with one grain of the hyd. c. cretâ four times a day.

The case was one of great severity, and the patient had, on many previous occasions, suffered very severely. The patient first applied on Aug. 6th, and on the 26th of the same month was nearly well, having, according to his own statement, never derived so much benefit from any other medicine.

Sept. 3d.—Cured.

Herpes.—The most severe and extensive form of this disease which I have witnessed occurred in a stonemason, aged 27. The eruption existed on the lips, nose, cheeks, forehead, penis, and buttocks. It appeared during the night, and was accompanied by a white tenacious secretion on the tongue. The disease always comes on after drinking freely of beer, or taking as little as two glasses of gin.

Amenorrhœa.—A patient, æt. 32, in whom the menstrual discharge was nearly suppressed, stated that she had violent sneezing and running at the nose at each menstrual period.

The foregoing observations are either extracted from the column of remarks appended to the register of my own out-patients, or they are more general results of experience founded upon the large number of patients constantly applying for advice—a number continually increasing, and affording a

very wide, though, in some respects, an imperfect, field of experience. The annual report promises to increase in completeness, and, consequently, in interest, with the improved registration of the in-patients now adopted. Imperfect as the present report is, I have thought it better to publish it than to allow the habit of collecting facts on the large scale to fall into disuse.

RESEARCHES

ON THE

PATHOLOGY, PHYSICAL SIGNS,
AND DIAGNOSIS,

OF

DISEASES OF THE HEART AND
ARTERIES,

IN CONNECTION WITH

THE SOUNDS OF THIS ORGAN.

By T. H. MOORE, A.B. M.B. T.C.D. &c.

(For the Medical Gazette.)

THE obscurities which at present pervade the subject of aneurism in its incipient stage, induce me to publish the following cases and observations, in the hope that some advantage may result therefrom to the profession in general.

CASE.—Permanent patency of the aortic aperture from dilatation of the aorta, and slight thickening, with induration, of the valves; incipient aneurism formed in the muscular parietes of the left ventricle; three varieties of aneurism exhibited in the course of the aorta—the true species, from its origin to that of the arteria innominata, the calibre of the artery being dilated, without any breach of surface, but with fibro-cartilaginous deposits in its coats. Secondly, fusiform dilatation at the origin of the arteria innominata, with a small pouch from thinning of the coats of the vessel; a circumscribed false aneurism, formed at the posterior part of the arch, producing, by its pressure, absorption of the vertebræ. Heart's action accompanied by a loud "buzzing," sometimes "creaking, or rasping murmur;" ascites, anasarca, disease of the liver with an emphysematous condition of the stomach, &c.

A private (David Kenny) in the 47th regiment, 35 years of age, was sent to Dublin, from the General Hospital,

Cork, to be brought before the Kilmainham Board, and discharged the service.

When admitted into the General Military Hospital, Phoenix Park (August 25th, 1841), he was suffering so severely from dyspnoea and orthopnoea, that he could not remain at rest in the recumbent posture, but was forced to sit, propped up in bed, to alleviate, in some degree, the sense of suffocation, which was extremely oppressive. His face was puffed up, œdematous, and congested; conjunctiva vascular, and tinged with bile; neck short and swollen, with turgescence of the veins; cellular tissue of the hands, arms, and lower extremities, infiltrated with serum, so that deep pittings in the integuments were produced by pressure. He complained chiefly of shortness of breathing, harassing cough, with ropy phlegm; a "dragging weight" about his heart and chest; sleepless nights, from startings and unpleasant dreams; loss of appetite; some thirst.

Physical signs of the chest, heart, and arterial system.—The chest, of capacious size, was heaved forcibly during respiration, but not equally dilated during the motions of each side; the superior part of the right being more energetic in its action, whilst inferiorly there was more fixedness of the intercostal muscles and ribs than was observed on the left side: from the antero-superior part of the right side, percussion elicits a clearer sound than from the left, which is not only comparatively, but absolutely, dull from the second intercostal space downwards: the respiratory murmur is supplementary in the right lung, over the extent of surface, from which a clear sound is obtained; about an inch below the inferior margin of great pectoral muscle, the supplementary character of the vesicular murmur ceases, its intensity abruptly terminates, and is replaced by the non-terminal respiration, the inspired air not penetrating into the vesicular tissue, nor minute bronchial tubes, but arrested in those tubes from which the terminating branches derive their origin. This description of respiration merges into that of a more defined bronchial character, assuming an increased degree of intensity as we approach the lateral and posterior portions of the side, where the degree of dulness on percussion is absolute, com-

mencing at the scapular spine, and extending to the lowest part of the side; the suppression of the vesicular murmur, and its replacement by semi-bronchial and bronchial respiration, accurately coincide with the loss of sonoreity on percussion. The tubular or bronchial respiration appears to have attained its maximum of intensity at a short distance from the inferior angle of the scapula, the escape of air during expiration being more marked, and attended with more resonance, than its entrance into the tubes during inspiration; below this its distinctness decreases, its intensity fades away, and at the most depending parts it is almost extinct. The resonance of the voice, superiorly, communicated to the hand, is perceptible, but not strong; upon the ear it strikes with force, and is bronchophonic; below the scapular spine the voice is broncho-ægophonic, being accompanied by slight tremulous undulations in its passage through the stethoscope; whilst over the inferior and lateral parts it becomes distinctly ægophonic, so that the successive bleedings of the voice, in their transit, resemble very much the squeaking of a punchinello. In the lowermost portion of the side this physical sign becomes less distinct, and, like the bronchial respiration, extinct. The presence of crepitation could not be satisfactorily ascertained, except during a paroxysm of coughing. In the supero-anterior division of the left side the respiratory murmur is clear, and of normal strength, though not so loud as in the opposite lung, being audible for three or four inches below the subclavicular region: it ceases to be heard in the cardiac region, and cannot be detected until we arrive at the posterior aspect of the chest; here, as well as on the right side, there are evidences of an effusion into the pleural cavity, not extending higher than the inferior angle of the scapula, and, consequently, not so considerable in quantity.

An exceedingly dull sound is elicited by percussion over the cardiac region, extending far beyond its limits; so that the inferior and middle divisions of the sternum have lost their sonoreity. This extent of dulness cannot be attributed altogether to displacement of the mediastinum by the effusion into the right pleural cavity, as the heart's impulses are diffused and felt over double the

extent of surface that is usual—not violent nor strong, but dull and laboured; so that, at each stroke, the chest is heaved, the sternum is shaken, and the epigastrium quivers. These heaving motions of the chest appear to the eye, viewing them in a horizontal direction, to originate in the action of an entire organ; not of a particular part. A slight thrilling sensation is experienced by the hand applied beneath the mamma; but over the sternum the vibratory, purring thrill, or twanging sensation, is much stronger and more evident. The action of this organ is laboured; sometimes it seems as if it were convulsed, or on the point of being totally arrested. The several parts composing the heart's rhythm are so completely obscured by a loud "beetle-buzz" murmur, that it is impossible to distinguish them individually, or recognize them collectively; to pronounce when the first sound begins, or the second ends; when the ventricular contraction has commenced, or the diastole has terminated: all—first and second sounds, systole, diastole, and interval—seem involved in, and replaced by, this abnormal "beetle-buzz murmur." Below the nipple this sound is rather indistinct, not exceeding a bellows-murmur, which creates in the mind the idea of its being deep-seated, or situated at a distance from the thoracic parietes. Approaching the sternum, this bellows-murmur seems to be more superficial, somewhat roughened or rasping in its character, but not having attained its maximum of intensity until examined midway between the fourchette of the sternum and the xiphoid cartilage, where an unceasing train of these abnormal murmurs, varying in degrees of intensity, follows in regular succession. They were reported to commence with a loud rushing, deep-cooing, and filing sound, assuming, towards their termination, a more roughened, rasping, and rather creaking character; resembling, but not amounting in roughness to, a pericarditic friction sound. The deep-seated and superficial arteries of the neck and upper extremities may be seen bounding in their places. This violent throbbing, or jerking pulsation, of the arterial system is visible at some distance from the bed; so that, when the arms are extended, the brachial and radial arteries are observed to

vibrate with energy, and elevate the integuments, although partial œdema of the hand and wrist exists. After the column of blood has been propelled into the arterial trunks, the vessels have been observed to dilate with force, and again collapse; but in the intermediate stage, between the complete dilatation and total collapse, a slight contractile or vermicular motion takes place, commencing in the smaller, and extending along the larger arterial trunks: during this action a reflex current of blood can be distinctly traced with the eye, traversing these vessels from the distal towards their cardiac extremity. In the course of the aorta, subclavian and carotid arteries, also along the spine posteriorly, an intense forward whizzing murmur is communicated to the ear, comparatively prolonged in its duration and uninterrupted in its succession, followed by a backward, regurgitating bellows-murmur. From the alternations in character which these abnormal murmurs are occasionally observed to undergo, it was conjectured that the advancing column and retrograde current of blood meeting, coalesced, and gave origin to the increased loudness and roughness in the stethoscopic phenomena. Pulse 108 per minute; respirations 44. The abdomen is distended, in consequence of the stomach and intestines containing flatus; the presence of fluid, also, was ascertained by percussing the abdominal parietes. The hepatic dullness on percussion extended beyond its normal limits; the surface of the liver is indurated, and its edges rounded. The scrotum is enormously swollen, the infiltration of serum into the cellular tissue of penis and scrotum being immense; the integuments are tense, glossy, semi-transparent; the weight of the genital organs increased; the passage of urine is not obstructed by the distorted, corkscrew shape of the penis; its secretion is scanty, high-coloured, but free from albumen.

History.—Seven months from the period at which this report was taken, he was performing his duty as an efficient soldier; the disease under which he labours being ushered in, after cold, or exposure to the night air, by violent palpitations, shortness and difficulty of breathing, pains in the chest; so that it is probable acute inflammation of the heart, its internal or external lining

membrane, existed. Subsequently the feet swelled; the œdema spread upwards to the legs, thighs, and abdomen. Coincident with the increase of the ascites and anasarca, he noticed a corresponding diminution in the secretion of the urine; its quantity varied at different times. His complaints have become aggravated since he left Cork, the cough being more harassing; expectoration glutinous, tenacious, streaked with blood; and the anasarcaous swellings more generally diffused.

V. S. ad 3xii. Cupping to the right side.

R. Digitalis in powder, gr. j.; Squill in powder, gr. j.; Calomel, gr. ij. Mix. To be taken three times a day in the form of a pill.

27th.—Has experienced much relief from the venesection and cupping, so that he can breathe with greater freedom, and is not oppressed by the constriction of the chest and the heavy dragging sensation hitherto felt about the cardiac region; the swellings are diminished; the cough not so distressing; the expectoration still viscid, and tinged with blood; respirations 32, not so laboured, the chest expanding with more ease. With the exception of the dulness on percussion being partially removed in the superior parts of the right side, but little alteration can be said to have taken place in the physical signs. Since the abstraction of blood, the bellows-murmur, which was indistinct, and deep-seated at the left side of the heart, seems to be more superficial, and increased in loudness. Pulse 104, unaltered in character.

Continue pills. To have a quart of Cream of Tartar drink in the day. Scrotum to be punctured with a fine needle.

29th.—The quantity of serum discharged from the scrotum has been considerable; although the dribbling has been constant, yet the distended state of the integuments remains, forming between the thighs a large tumor, with slight patches of inflammatory redness and excoriation, the result of irritation, caused by the continual contact of the moist scrotum with the skin of the thighs. No displacement of the raphe has taken place from the infiltration of the cellular tissue being universal. The superior parts of the lungs are more permeable to air; crepitation is more distinct; bronchial res-

piration not so well marked; the inspiratory and expiratory motions of the lung are attended with the friction sounds, which are partially confused with the crepitus; the hepatic enlargement can be detected by a gentle, but quick, tapping over the liver with one or two fingers, which, by displacing the fluid, arrive at the solid indurated viscus. By carrying the fingers to the right and left from this point, its outlines can, with some degree of accuracy, be traced; as well as by the extent of dulness on percussion.

Repeat pills, &c.

Sept. 1st.—In addition to the physical signs reported, an extensive and well-marked friction-sound is audible in the cardiac region, in part connected with the respiration, in part with the heart's action; much coarser between the nipple and sternum than elsewhere.

Let a blister be applied to the left side.

Medicines to be repeated.

11th.—This morning he suffers dreadfully from a sense of suffocation, oppression, and weight about the chest; his pulse continues quick, full, and throbbing; breathing laboured, hurried, heaving; countenance bloated, congested, and expressive of great anxiety. The results of auscultation vary in a slight degree from those hitherto recorded: the accumulation of fluid in the abdomen has increased, this cavity being full and distended to a painful degree, fluctuation being evident on percussing its parietes. It was now decided upon, in consultation, that the urgent request of the patient should be acceded to, in performing the operation of paracentesis. From two to three quarts of limpid fluid were withdrawn, the removal of a greater quantity not being deemed advisable: some hæmorrhage ensued after the operation, but was checked by compresses: his strength was supported by nutritious diet, and the following medicine ordered—

Camphor Mixture, ʒvi; Elaterium, gr. i.;

Spirit of Nitrous Ether, ʒii.; Mix.

An ounce to be taken every fourth hour.

Electuary of Cream of Tartar.

15th.—Some temporary relief has been afforded by the operation; there has been a constant dribbling or oozing from the puncture, so that the quantity of fluid thus discharged has probably

exceeded that originally withdrawn ; the gums and breath betray evidences of mercurialization ; secretion of urine more copious ; anasarcons condition of the scrotum and penis diminished ; the integuments are loose, thickened, and have a welted appearance ; the dyspnœa and orthopnœa continue urgent ; cough frequent ; expectoration copious, and viscid ; the loss of sonoreity on percussion is as obvious as when admitted ; the heart's action tumultuous ; bellows-murmur loud, and extensively heard ; along the sternum the character of the double-dash, regurgitating, whizzing murmur, imparts to the mind the idea of the advanced and advancing column of blood, propelled with enormous force, being arrested, retroceding, and coalescing with the progressing column of blood. From the confluence and subsequent commingling of these sanguineous streams, a sudden splash, or double-dash, ensues ; an instantaneous convulsive action of the entire organ succeeds : a series of ineffectual attempts is made to surmount this disturbance, which appears to be overcome alone by the laboured action and energetic force, propelling forwards the contents of its cavity with a deep cooing, whizzing, and beetle-buzz murmur : pulse 104 : the physical signs, produced by considerable liquid effusion, remain as noted on admission.

18th.—Is evidently yielding to the disease ; face more swollen, of a bluish leaden colour, with a tinge of yellow ; the conjunctiva and skin present a subjaundiced hue ; he lies on the right side, with the arms extended ; ears and lips of a livid colour, purplish patches diffused over different parts of the body ; neck tumid ; veins turgid. Since last report he has been dull and stupid, but retains his mental faculties, complaining of his being racked to pieces by the cough-palpitations ; his appetite has failed ; thirst increased ; he seems to be aware of his approaching end.

23th.—Died yesterday at 3 A.M.

*Autopsy 24 hours after death :—*The external appearance of the corpse is such as I have seldom witnessed, and almost baffles description : the face immensely swollen ; features distorted : from their congested appearance, also from the lividity of the ears, lips, and nose, as well as from the engorged

state of the venous trunks, it was conjectured that he had suffered extreme agony in the last moments of life : the ramifications of the abdominal and thoracic veins being so prominent that they can be distinctly traced, cause the surface to present a marbled aspect : the sides of the abdomen exhibit different shades of red, in some parts bright scarlet, which, deepening in colour, assumes a purplish tinge : scattered here and there indiscriminately over the chest and abdomen, the latter in particular, are variously-sized circumscribed spots, some of deeper, others of lighter red, clustered together in greatest numbers above the pubes and in the groins, which do not disappear on pressure ; some excoriation of the scrotum and the inside of the thighs, with a few semi-gangrenous spots on the former, and a swollen, red, and twisted shape of the penis, near the corona glandis ; the lower extremities are comparatively free from œdema ; a few vesications have formed on the posterior parts.

The increase of size in the dimensions of the thorax was mainly attributable to an enlargement of the right side. As soon as a puncture was made into the pleural cavity, straw-coloured fluid instantly rushed out ; the quantity which thus escaped being considerable.

On raising the sternum, the pleural cavity of each side appears shortened in its vertical measurement, by the encroachment of the liver on the right side, and the distension of the stomach in the centre, and on the left ; the convexity of the stomach being unusually high in the present instance : the inferior and posterior part of the right pleural cavity is occupied by a brownish-coloured fluid, which fills up the intermediate space of two inches, between the lung and the diaphragm. The middle lobe, widely separated from the inferior, which lies compressed at the posterior and lateral portion of the side, is coiled upon itself, and overlaps the lower part of the superior lobe ; these divisions of the lung being pushed upwards and forwards by the fluid accumulated behind, so that the surface naturally in contact with the inferior lobe is anteverted, its aspect looking forwards, and in contact with the intercostal pleura, whilst the anterior surface is retroverted, and directed posteriorly, being in contact with, and

slightly agglutinated to, the surface of the middle and superior lobes. By separating these adhesions, the surfaces which had been approximated exhibit a reddish colour from the vascular network: discolouration of the pleura, and slight exudation of plastic lymph, which exists in greater quantity at the edges than at the centre, and is more advanced in organization, although of recent formation; the intercostal and diaphragmatic pleuræ, also, are roughened by the exudation of lymph, flakes of which float about in the fluid, and are collected into masses at the most depending part of the cavity: in the left pleural cavity, some straw-coloured serous fluid has gravitated to the posterior part; from two to three quarts were contained in the right, scarcely a pint in the left, pleura.

The mucous membrane of the larynx and trachea is congested; about the root of the tongue and the epiglottis it is tumid, partial infiltration of serum into the cellular membrane having taken place; the rima glottidis remains unaltered in shape; the subdivisions of the bronchial tubes are affected with different degrees of inflammation; the right lung retains, in its superior lobe, its crepitating character, and normal degree of elasticity, but of these there is a great deficiency in the middle, and an almost total absence in the inferior lobe, in consequence of the atonic state of the pulmonary structures, and compression exercised on the vesicular tissue by the accumulated fluid: the pulmonary tissue was not much engorged with blood, nor with serum, but compressed and condensed, so that the lung, although diminished in volume, did not resemble in its solidity a pneumonic or hepatized lung; when incised it presented a dark livid colour, not unlike the transverse section of a placenta: the interior of the veins and arteries was deeply tinged with blood; the left lung, partially affected in the lower lobe, has evidently been the chief organ in carrying on the functions of respiration.

A notable alteration in the position of the heart has been produced by its enormously enlarged condition, and an effusion into the pericardium, rendering tense this envelope, and stretching it across the diaphragm, so that the body of this organ occupies the inferior and

middle parts of the mediastinum: its apex and base, instead of being situated obliquely with regard to each other, are directly opposed, the former occupying the left pleural cavity, the latter situated in the right, and in contact with the coiled portion of the middle lobe: the external surface of the pericardium possesses in some places a crimson colour; minute vessels are seen to branch off in different directions: when laid open, a tea-cupful of serous fluid was removed, which, with opacities and slight roughness of the membrane, were sufficient evidences of a subacute inflammation of the pericardium. The auricular and ventricular cavities appeared to be enormously distended with coagulated blood, so that in weight and size it nearly equalled an ox's heart: the veins on the anterior and posterior aspects of this organ were gorged with fluid blood; its weight, when partially freed from the coagula, exceeded $2\frac{1}{2}$ lbs. avoirdupois. The augmented volume of the heart is manifestly attributable to an unusual degree of hypertrophy of the parietes of the left ventricle, with dilatation of the cavity in its vertical and transverse measurement. The apex, usually well defined in the normal condition, presents a rounded, obtuse shape, which is dependent upon the abnormal enlargement of the ventricle; on the anterior aspect, situated about the centre, and apparently in the substance of the septum, is a projecting conical tumor, firm to the touch, slightly moveable, seemingly the result of a collection of fibrine, but produced by the bulging of a hypertrophied carnea columna. In completing the transverse section of the heart, about two inches from the apex, and slitting up the ventricles, it was found that the hypertrophied muscular substance of the left measured from eight to ten lines, which degree of thickness was considered to be uniformly retained, except near the apex, at the posterior aspect of the ventricle, where the muscular substance was evidently more flabby, much thinner, and differing in colour from the surrounding parts; circular in form, circumscribed in extent, and corresponding in its diameter to that of a sixpence: when pressed on from the exterior, no resistance is offered, the attenuated muscular fibres yield with the greatest facility, so that

the finger protrudes into the interior of the ventricle, through a species of cul-de-sac encircled by the surrounding hypertrophied muscular fibres. In examining and pressing from the interior of the ventricle, an evident bulging, or conical projection, is formed externally, which cannot be produced in any other portion of the ventricle; from which alterations in the appearance and density of the muscular structure it was inferred that an incipient aneurism of the ventricular parietes must have originated in, and coexisted during the patient's lifetime, with the morbid changes progressing in the heart; the endocardium of the aneurism being continuous with that of the dilated ventricle. This aneurism, towards the termination of the case, may have formed a projecting tumor during the systole and diastole of the ventricle. The cavity of the ventricle is capable of containing a moderately-sized healthy heart, or large-sized orange; its interior presents an intricate interlacement of the muscular fibres, the fleshy columns having apparently multiplied in number; those, at least, which are passed unnoticed in other hearts, have become so much developed as to attract particular attention; the fleshy columns to which the tendinous cords are attached are increased in thickness, as are also the latter; the mitral valves retain their transparency and healthy aspect; their size is nearly proportionate to the diameter of the auriculo-ventricular aperture, but from the width of this aperture viewed through the auricle, from its measuring three inches, and admitting the four fingers held transversely, also from the facility with which fluids pass through this opening into the auricle, it was conjectured that passive dilatation of the orifice, with insufficiency of the valves to effect its perfect closure, must have existed. The cavity of the auricle is dilated, the parietes somewhat more dense than usual; but no traces of chronic inflammation can be detected in the interior; the endocardium is deeply tinged with red, perhaps from imbibition the appendix dilated, and its muscoli pectinati well developed. The remarks made with regard to this auricle and valves apply equally to the right. The cavity of the right ventricle is encroached upon, and diminished, by the bulging of a

hypertrophied septum, which, being arched, is convex towards the right, and concave towards the left ventricle.

The aorta, in the ascending, middle, and descending divisions of its arch, was dilated to double or treble its normal calibre, so that it formed an unusual bulging in front of the trachea, and compressed several of the large and small intra-thoracic veins, the coats of which were increased in density, and the free circulation of the blood obstructed. From its origin, to three inches below the termination of its arch, the coats of the vessel are thickened; the internal lining membrane is discoloured, presenting in several places patches of vascularity, and yellowish-white specks. It possessed none of the smooth glistening polished surface so striking in the healthy artery; but was thickened, uneven, corrugated, and elevated, in some parts, into circular projections. Corresponding to these yellowish discolourations, the lining membrane can be detached with the greatest facility by passing the edge of the scalpel, or touching the part with the point of the nail. There seems not to be the least attachment between it and the coat underneath. Beyond its limits, the adhesion between the internal and middle coats is so firm, that it requires some force to separate them; the surface of the middle coat, viewed through a microscope, exhibits a yellowish colour, granular appearance, with depressions and elevations. A few ossific deposits were situated in the middle coat, without having produced a rent in the lining membrane. The increased thickness of the coats of the artery is attributable to a hypertrophied condition of the middle tunic, which, when exposed by removing the lining membrane, possesses the characters and appearance of being formed by distinct and well-developed muscular fibres, apparent without the aid of a microscope; but when viewed in their magnified state, their existence is rendered indisputable. With some degree of caution, and slight forcible traction, these muscular fibres were divisible into three separate layers; the two first of which, consisting of the internal and middle layers, had a quantity of fine condensed cellular membrane interposed: the distinction between the second and third layers was not so

attainable, as much difficulty was experienced in effecting their separation. The direction which the hypertrophied fibres assumed was pronounced to be threefold—longitudinal, circular, and oblique; the interlacings of the latter produced, in many places, an obscurity in the arrangement of the former. In those parts corresponding to the yellowish discolourations, the continuity of the fibres was interrupted, and not unfrequently destroyed, the external tunic being visible underneath. The *arteria innominata* was dilated in its calibre as far as its bifurcation into the carotid and subclavian; its coats thickened, except at its origin, where, from the attenuation or atrophy of the structures of the vessel, they were perfectly diaphanous, in an extent of surface equalling the circumference of a sixpence. Complete absorption of the fibres of the middle coat, so well developed in every other portion of the arch, was considered to be the cause of the diaphanous state of the *arteria innominata* at its origin. The internal and external coats were perfect. At the posterior part of the arch, immediately behind, and at a short distance from the left subclavian artery, is a well-defined aneurismal pouch, capable of containing a small-sized walnut, with a capacious circular aperture, smooth and glistening; the lining membrane of the artery and aneurismal pouch being continuous.

The apex of this globular sac was much thinner than at the origin of the sac. Externally, it was adherent to the sides of the bodies of the third and fourth dorsal vertebræ, which presented deep indentations—the consequence of absorption produced by the pressure of the aneurismal pouch.

In the abdomen some fluid was contained, scarcely amounting to a quart. No traces of peritoneal inflammation could be detected. The stomach, which was distended to a great degree, did not collapse, as in ordinary cases, when the œsophagus was cut across two or three inches above the cardiac orifice. By its distension, the diaphragm was pushed upwards, and the left pleural cavity encroached upon. The tense state of the muscular fibres of the diaphragm was rendered more remarkable, as the reverse might have been expected from the effusion into the pleural cavities, and the hypertro-

phied condition of the heart. The other intestines were slightly, but not proportionably, distended with flatus; the transverse colon being more free than usual. The stomach, when laid open, contained a quantity of thick pulpy greenish-coloured substance, which was collected into a mass at its left extremity. The interior of the stomach exhibited a very remarkable and beautiful pathological specimen of extensive submucous cellular emphysema, occupying the anterior and posterior surfaces, great and small curvatures of this viscus.

The air, which was infiltrated through the submucous cellular tissue, caused the mucous membrane to be elevated into large vesicles, several of which were grouped together in the form of clusters, of a greenish-white colour, downy feel, and frothy appearance, like a number of soap-bubbles floating on the surface of water. The mucous membrane thus separated from the muscular coat formed, in several places, a prominent surface, elevated above that in its vicinity from a more extensive infiltration of air into the cellular tissue; also from rupture of the cells, and consequent coalescence with each other. The interior of the organ thus affected had lost completely its normal characters; the rugæ, mucous follicles, and gastric glands, being thus rendered indistinct and obliterated by this gaseous exudation or secretion into the cellular membrane. Towards the pylorus, the air-vesicles were less numerous, discrete, and slightly elevated, in consequence of the integrity of the cells, and their non-communication with each other. The mucous membrane here retained its pale colour, and smooth soft villous surface. By pressing the coats of the stomach between the fingers, the crepitation of air was rendered obvious, not only to the sense of touch, but also to that of hearing; so that, by subjecting the larger lobules and clusters to an ordinary degree of pressure, and by passing the scalpel lightly over their surface, the crepitation thus occasioned resembled the crackling so perceptible in the cellular tissue of the neck and thorax after fracture of the ribs, with injury of the lung. Externally, the bulging of the left or emphysematous extremity of the stomach was pronounced to be much greater

than natural. When thrown into water, the entire organ floated buoyant on the surface, whilst other portions of the intestinal canal sank.

This disease was limited in its extent, as no trace of it could be discovered in any other part of the intestinal canal. The duodenum, the cæcum, and its valves, were healthy; the liver was weighty, enlarged, indurated; its mottled incised surface, of brown and white, corresponded, with tolerable accuracy, to the colour of a grated nutmeg.

[To be continued.]

CASE OF
BLUE DISEASE, FROM A RARE
MALFORMATION OF HEART.

By JAMES DOUGLAS, Esq.

Member of the Faculty of Physicians and Surgeons of Glasgow, Lecturer on Anatomy, &c.

(For the Medical Gazette.)

—
ANY malformation of the heart, permitting the venous blood to mingle with the arterial, before the distribution of the latter to the system, will produce the "blue disease," and we find that the most frequent cause of this commixture is the patency of the *foramen ovale*. In the following case the anatomical cause of the disease was very different from what we usually see; indeed, I cannot find an instance precisely similar on record. Besides, as the case occurred in my own family, and was watched with the most painful interest, the account which I can give of it should be more than usually full and correct.

My little son, Thomas Douglas, was as plump and firm as other children at birth (Sept. 4, 1840), only so dark coloured that the nurse thought he had been half strangled by the cord, which was twice round his neck. When about four months old, his mother wondered that his skin had not cleared, and began to think that he was peculiarly blue in his colour at times. It is truly said that mothers have keener eyes than any one else, with regard to their offspring, for I could not, or would not, see any thing uncommon about him for a long while after this. He throve well, and was good-tempered, and smiled, but he never laughed loud, nor exhibited any glee, like most in-

fants. It was when seven or eight months old, that I first was persuaded of the general dulness of his skin, and the purple hue of his lips and nails, and that I remarked the occasional aggravation of this when crying, and on certain days, even without such exertion, into positive lividity. More recently, at such times, dark blue veins might be seen in his fingers and toes, and even in his lips and nose, perfectly distinct, while the capillary vessels, being equally dark, gave the whole a deeply livid tint. His pulse and respiration were very variable, sometimes very slow, and sometimes very frequent. When oppressed, the respirations were 48 in the minute, and were drawn quickly to the full, were retained full for an instant, and then expiration took place more gradually. Nothing abnormal is detected by listening to his chest, the sounds of the heart being quite natural and regular.

Teething commenced in June. The two central incisors of the upper jaw first appeared, then the two central below, then the two lateral above, then the first molar above, then the first molar below, while the lower lateral incisors had not come through up to the period of his death. This irregularity, being attended as usual with considerable constitutional disturbance, of course aggravated the symptoms arising from the state of his circulation.

In July he had a bad fit, of a convulsive nature, which lasted for nearly two hours: he was in the country, and by the time I arrived he had fallen into a quiet sleep. It left no bad effects behind. About a week after, he had another, but slighter, and three weeks after this a third. The warm bath was used while he was in each, and a clyster administered. About the beginning of November, just after returning to town, he had one, about 2 p.m. I happened to come in just as he took it, and it was the first that I had seen him in. He was quite insensible, with a good deal of convulsive action of limbs, some foaming at the mouth, no distortion of face, but the pupils turned upward, quite out of sight. On the convulsions ceasing, in about a quarter of an hour, he remained insensible, but calm, the pupils still turned up, the face pale, the breathing slower than usual, the skin cold and perspiring profusely, the pulse not to be felt at the

wrist. He was put into a hot bath for five minutes, and had six or seven ounces of warm soapy water with two tea-spoonfuls of turpentine injected, which brought away a deal of wind, and but little feculent matter. In two hours he opened his eyes, and became sensible, appeared very thirsty, took some drink, and seemed much exhausted, but did not sleep till seven in the evening. Five days after this, about 9 p.m., he had a fit, but without convulsions, and remained insensible for two hours and a half. Towards the end of that time, he seemed just expiring, being pulseless and cold, but gradually revived by the liberal administration of hot brandy and water, and before 1 in the morning was much in his usual state. He got some refreshing sleep, and was as well as usual the next day. Three or four similar fits occurred in the course of this month.

On December 2d he was sent out to get the air, as the day was mild, and he had not been out of the house for three weeks. Just when crossing the street he brought up a mouthful or two of blood, and his nurse ran in with him. I arrived in a few minutes, and found him faint, with his face still bloody. A little cold water was given him, and he revived. He then fell asleep, apparently from exhaustion, and slept for an hour and a half. About 4 p.m. half a tea-cupful was brought up, and some of it, which had been caught in a basin, was shown me, and was fluid, and intimately mixed with minute bubbles of air, so that I made up my mind that it was from the lungs. After it came away he appeared relieved, and lighter. About 3 a.m. of the 3d, I was called up, his nurse saying he was going to bring up more blood. He seemed hawking something in his throat, and blood appeared at his nostrils; a little was spit up, and more seemed to be swallowed. This was no doubt the reason why I was told at first that he had vomited the blood; probably he did so after he had swallowed it. In the forenoon of the following day he was quite lively.

December 4th.—This morning he did not appear to be so well as usual, being more oppressed and blue. At twenty minutes to 3 in the afternoon his mother brought him to me, saying she feared he was going to take another fit. He was very livid; his lips, and

the point of his nose, and his fingers in their whole length, were absolutely blue. He was crying violently, as feeling much oppressed. He held out his arms to me, and I took him; and then he did the same to his mother. Immediately afterwards he became insensible, without any convulsion; the blue colour disappeared, and he became quite pale; his pulse sunk to 48, and his breathing to 10, in the minute; and at five minutes past 3 he expired; this last fit having lasted just twenty-five minutes. He was fifteen months old the day he died.

Inspection.—December 7th.—He was opened by Dr. J. G. Fleming, in the presence of Dr. Wilson and myself. The lungs appeared quite healthy, and without any engorgement. The moment the pericardium was opened, it was obvious what was wrong. The aorta was seen rising from the middle of the heart, and appearing more prominent than usual, because not overlapped by the pulmonary artery, which was less in size than a writing-quill. The heart and lungs were removed together.

The heart was gorged with blood; the auricles were opened from behind; the foramen ovale was open, and about three-eighths of an inch in diameter; the aorta was about a third larger than usual in a child of his size, and took its origin equally from both ventricles; it had the usual three valves at its commencement. The ductus arteriosus was open, scarcely larger than a crow-quill. From where it joined the pulmonary artery, the latter divided into its right and left branches; but its trunk was little larger than a crow-quill, back to near the right ventricle, where it was quite impervious.

The apex of the heart was next cut off, when the two ventricles were seen to be of equal thickness. The handle of the scalpel passed from each of them into the aorta. The septum was deficient, just at the root of the aorta, presenting a smooth concave border, leaving an opening through which the forefinger could be passed. The mitral and tricuspid valves were normal. The upper angle of the right ventricle was directed as usual to the pulmonary artery; but there was no opening, nor were there any traces of valves. The other viscera appeared natural.

The course of the circulation must

here have been very uncommon, inasmuch as the blood must have passed in a retrograde direction through the ductus arteriosus, that being the only way in which any *could* get to the lungs, as the root of the pulmonary artery was closed. The blood from the system, poured from the venæ cavæ into the right auricle, and that from the lungs into the left, from the pulmonary veins, must have mingled freely in their passage simultaneously into the aorta: besides that, a portion of the contents of the right auricle must have passed directly into the left, to help to fill it, the quantity which had come through the lungs having been very small indeed. It was no wonder that the poor little fellow should have been blue, as a mixture of three-fourths or four-fifths of venous blood, with but one-fourth or fifth of arterial, was the fluid supplied for his general circulation.

The little sufferer received temporary relief from hot brandy and water, of which he became very fond; also from a mixture containing ether and ammonia; and for six weeks before his death he suffered a good deal from cough, which was somewhat relieved by a mixture of mucilage and the camphorated tincture of opium. His intellect was always clear and lively. About the month of July he was able to stand at a chair; but after the fits came on he never attempted to set his feet to the ground. Dr. Wilson was extremely kind in seeing him, and suggesting remedies to relieve him; but a cure was too plainly out of the question.

ASIATIC CHOLERA.

To the Editor of the Medical Gazette.

SIR,

A FEW days since I was called to a case which presented all the symptoms of the true Asiatic cholera in a much milder form than the cases I saw at Oxford during the epidemic of 1831. Since that time several cases of Asiatic cholera have been reported in the medical journals as occurring sporadically during the prevalence of the common English cholera. This would seem to render it probable that such sporadic cases may have passed unnoticed before the dreadful epidemic to which I have referred, and that the Asiatic cholera itself may be nothing more than an

aggravated form of the disease so long familiar to us. The chief difference between the two seems to be, that, in the former, the bile and other secretions are suppressed; while, in the latter, they still flow. This arises, I conceive, from the blood being drained of its fluid parts much more rapidly in Asiatic than in English cholera.

In common diarrhœa, as well as in English cholera, the stools consist of the watery part of the blood, holding some small proportion of albumen in solution. Suppose this drained away with great rapidity, the blood would not be in a state to circulate freely through the glands, and, consequently, their secretions would be suppressed. Aggravate this state, and you will have not merely water holding albumen and salts in solution, but the liquor sanguinis itself thrown out, and hence the flakes in the watery motions of Asiatic cholera. It might thus, perhaps, be inferred that the same causes that bring about our common cholera, may, when acting with greater intensity, give rise to the more severe disease. The lividity of the countenance is produced in the same manner as the suppression of the secretions; for, as Dr. Stevens has proved, when blood is deprived of its serum, and, with it, its saline constituents, arterIALIZATION cannot take place; the whole of the blood in the arteries, as well as the veins, is dark-coloured; and this dark-coloured blood, circulating in the capillaries, gives a livid tinge to the countenance. As the blood is rendered thicker, and, at the same time, cannot obtain its proper quantity of oxygen (from the absence of its saline constituents), the heat of the body is lessened; the heart, not receiving its proper stimulus, beats faintly; and hence the coldness of the surface, and the weakness or absence of the pulse.

According to an analysis of cholera stools by Wittstock, of Berlin, they consist of:—

Water	1956.0
Chloride of sodium, with a few parts of chloride of potassium	6.0
Albumen, with phosphate of lime	7.0
Carbonate of soda, phosphate of soda, hydrochlorate of ammonia, salts, with organic acids, traces of uric acid, and osmazome	5.0
	2000.0

The most remarkable part of this analysis is the presence of uric acid; and it proves, if correct, that that substance, instead of being separated from the blood by the kidneys, flows with the fluid portion of the blood, which holds it in solution, into the intestines. It also assists in proving that the function of the glandular organs is merely that of separating from the blood substances previously contained in it. I am not aware that suppression of urine has been noticed either in severe diarrhoea or English cholera: but this is a point which deserves investigation. I shall now proceed to detail the case.

Sept. 7th.—I was called at 6 A.M. to see a girl, aged 10, the daughter of a labourer in this town, who had been attacked about 12 P.M. with severe vomiting and purging. She had complained of sickness the preceding day. She had eaten fruit two days before; but merely an apple yesterday. The general aspect of the countenance was anxious; the eyes sunk, with a livid circle surrounding them; the cheeks also were very slightly livid; the surface was cold, particularly the hands and feet; the pulse rather quick, but very small and weak. There was constant nausea, frequent vomiting of a colourless watery fluid, and the motions flowed away in the bed. The motions, as shewn by the sheets, were colourless, with a faint and not particularly disagreeable odour, and a fibrinous flaky substance was left on the sheet: in short, they were exactly such as I had seen in the cases of 1831. Cramps of the legs and abdominal muscles frequently occurred; and there was distressing thirst, the patient constantly calling for cold water.

I ordered her a tea-spoonful of brandy every quarter of an hour, and a mixture of creta with opium.

8 A.M.—Vomiting and purging of the same fluid continue. She has rejected each dose of the mixture. The cramps have somewhat diminished. The other symptoms as at the last visit. Ordered,

Hydr. Submur. Opii Pulv. aa. gr. ii.;
Glycerrhiz. Pulv. gr. xv. ft. pil. xij.
cap. j. om. semihora.

Continue the brandy. Allowed to drink as much cold water as she likes.

2 P.M.—Vomiting continues after taking any thing; pulse 100, weak; great thirst; bowels not so much re-

laxed, but the motions contain no trace of bile; tongue cool, but clean.

To continue the pills; to take a tea-spoonful of brandy every hour, and have a bottle of hot water applied to the feet.

10 P.M.—The skin warmer; pulse 100; cramps have been rather severe; thirst and other symptoms much the same, but the bowels have scarcely moved. No urine has passed since the commencement of the attack.

To continue the brandy and pills.

8th, 9 A.M.—Reaction complete; the skin hot; the pulse quick; the face flushed; tongue dry and red; bowels not moved since yesterday; vomiting ceased; the eyes much injected. The ignorant mother of the girl has given her half a pint of brandy since yesterday morning, and rather overdosed her. The indications appeared to be, to moderate the reaction, to move the bowels, and at the same time prevent any return of the vomiting. For this purpose I ordered the following mixture:—

R Potass. Nitrat. ʒj.; Magnes. Sulph.
ʒvj.; Acid. Hydrocyan. Dil. ℥xij.;
Aqua, ʒvj. Cap. c. j. amp. 2dis horis.

3 P.M.—The injection of the eyes has disappeared, but the face is still flushed, and of a brighter colour. The pulse has sunk to 86, and there has been no recurrence of the vomiting: the bowels not yet moved.

Cont. Mistura.

9 P.M.—Going on well, but no motion.

Pulv. Jalap. gr. v. statim.

9th, 9 A.M.—The bowels have been relieved three times; motions yellow; pulse 76; some griping pains in the abdomen.

Cont. Mistura.

8 P.M.—Pulse 70; countenance rather flushed; tongue clean and moist; no sickness; bowels relieved twice since last night; motions yellow. Is now asleep.

10th.—Convalescent.

I think all will agree with me in considering this a case of Asiatic cholera; or, which is the same thing, a case presenting every distinguishing feature of that disease.—I am, sir,

Your obedient servant,

PHILIP B. AYRES, M.D.

Thame, Sept. 12, 1842.

REMARKABLE CONSTIPATION.

Inability to empty the Bowels during Three Years.

By JAMES CHALMERS, Surgeon,
Cape of Good Hope.

(*For the Medical Gazette.*)

S. C. æt. 20. It appears that she has been troubled with constipated bowels ever since her birth. Her mother states that she never knew her to have a stool without the use of a piece of soap introduced into the rectum. At the period of puberty, menstruation occurred imperfectly: she was about 16 years of age, of a pale complexion, and of sedentary habits. Pil. Aloes. c. Myrrh. with Ferri Sulph. were prescribed.

Previous to the commencement of our history, her bowels acted imperfectly, and menstruation was irregular; in March 1839, the following is the note made.

This case now assumes an interesting character: she has not had a stool for 10 days; there is no fever, pain, or sickness, present. Purgative medicines of every kind have been given. On the 7th March, after fruitless attempts with the common enema syringe, a tube (similar to that recommended by Dr. O'Beirne in his work on Defecation) was gently introduced, and pushed up—pumping a little soap and water at intervals—until it reached 14 inches at least. Infusion of Senna was then pumped up till the abdomen was distended. In a few minutes, one or two pieces of scybalous matter, flattened, pale, yellow, and of faint smell, were passed. Her appetite is very bad; has never any desire to eat ordinary food; for days, merely picks a little at the breakfast-table, or eats walnuts or raisins, or an orange, and seems thirsty. Tongue white; papillæ large; gums spongy; pulse 90, small, weak; skin dry and harsh,

On the 8th, 9th, 11th, and 14th, the same means were used, but unsuccessfully. On the 15th, the tube was again used with a more favourable effect; $\frac{1}{2}$ lb. of fæces came away in small scybalous flattened, masses, from which considerable relief was experienced. There appears to be an obstruction a little above the sigmoid flexure of the colon; the tube is generally checked

in its progress, and on withdrawing it, it is always firmly grasped, as if spasmodic action existed in that portion of the bowel.

Quinine and rhubarb have been daily administered, leeches to the groins, and cupping-glasses to spine when the menstrual period was anticipated, or when spinal irritation existed.

In August, I had an opportunity of using a powerful electro-magnetic apparatus once or twice, which, on one occasion, had a favourable influence in causing spontaneous action of bowels. The pulse was much accelerated, and considerable excitement was produced during the continuance of the passage of the electro-magnetic current, which was applied to the epigastric region and spinal column. She was attacked with the prevailing epidemic (rubeola) and had it mildly: cough was the most urgent symptom, and remained for some months afterwards, but had more of a spasmodic or sympathetic than inflammatory character. Her rest is bad, and spirits have been, at times, much depressed. Every remedial means have been resorted to. Croton oil had a fair trial, both internally and externally, but without any effect; vomiting was produced when large doses were administered.

October 1840.—The case has continued the same for some months back, the bowels never having been relieved but by artificial means. Tonic medicines in great variety have been administered—Carbonate of Iron, Tinct. Ferri Mur., Iodine, Strychnine, in combination with bitter purgative extracts, horse exercise, shower-baths, sponging with the nitro-muriatic lotion, frictions on spine and abdomen, &c. After the use of the nitro-muriatic acid, the skin became highly tinged with bile, the linen stained by the cutaneous perspiration, and the urine was loaded; all the symptoms of icterus, except nausea and vomiting, were present. The total want of appetite for natural food at times still continues, and her existence is a wonder to every one, taking so little nourishment as she does.

During the month of December 1839, January, February, March, and April 1840, she had only two evacuations by the usual means. My accidental absence was partly the reason of so long a period passing without an evacuation;

she suffered very much during part of the period mentioned, but she is daily enabled to take exercise, and to continue her domestic amusements.

May 1841.—The fœces passed now on using the tube have a stronger smell and more natural appearance. The obstruction in the bowels does not seem so decided; a torpor exists, and there is a narrowing of the anus, but on introducing the finger per rectum, to examine its condition, when withdrawn it is covered by fœces.

April 1842.—Matters continue much the same as before; no evacuation without artificial means once in four, five, or eight weeks; the health is failing, and the internal organs begin to sympathise as her years increase; leucorrhœa has been more or less present for some months, although checked by lytta; her lips are not feverish; the abdomen tumid; the neck of uterus enlarged; pain almost constant in the back; the appetite not improved. A material diminution of bodily strength, and disinclination for exercise, have latterly shown themselves.

ON THE CIRCULATION OF THE LIVER.

To the Editor of the Medical Gazette.

SIR,

A FEW weeks ago a letter appeared in your journal from Dr. Carson, junior, in which he pointed out that I had been anticipated in publishing certain views concerning the circulation of the liver, which I conceived to be novel*. The views alluded to related to the question—Why the *venæ cavæ hepaticæ* should be formed in such a peculiar manner, as compared with the veins generally, as to resist compression, and preserve their walls patulous, instead of collapsing. The explanation which I offered was to the effect—that this structure allowed the blood in the hepatic veins to come under the influence of atmospheric pressure, so as to be accelerated in its course to the heart by that means: and that the auxiliary force thus brought in aid of the other powers circulating the blood, relieved, in a secondary manner, the vessels of the portal system. It having been shown by former inquirers, that when the chest

is expanded during the act of inspiration, there is a tendency for a vacuum to be formed in the cavity of the pericardium, and that the blood, urged onwards by the weight of the atmosphere to occupy that space, rushes along the veins with increased velocity at that time, there being a special provision to prevent the main trunks from collapsing when the pressure is so directed upon them, I was led to conclude that the rigid structure of the veins of the liver was intended to allow the blood to flow from the gland into the heart, under the same power of compression, with an accelerated rate of motion, and without their undergoing any diminution of their calibres. Some remarkable peculiarities in the relative situation of the hepatic veins to the right auricle, particularly as influenced by the successive movements of the diaphragm in respiration, seemed to corroborate that view.

It is my duty to mention that, before composing the paper which contained these observations, I had consulted with considerable diligence all the recent standard works on physiology, as well as other treatises where I thought the same subject would be discussed, so as to be assured that they had not occurred previously to others. But I did not find any thing bearing on my inquiries; indeed, the particular anatomical structure of the hepatic veins adverted to, did not seem to have been thought of before as a problem which required solution.

Dr. Carson has, however, shown, in a way preventing all dispute, that the principal part of the views which I advanced had suggested themselves several years ago to M. Berard, professor of physiology in the school of medicine at Paris; and at a later period, to his own distinguished father; and that the former had propounded them in a memoir published in the *Archives Générales de Médecine*; while the latter published them in the third edition of his *Treatise on the Circulation of the Blood*. I cannot do otherwise, therefore, than relinquish my claims of priority for these views to those gentlemen; and I only venture to hope that, having been introduced again by an independent course of observation and reasoning to the notice of physiologists, the opinions in question may be thought deserving of greater atten-

* See the *MED. GAZETTE* for July.

tion, in future, than has hitherto been directed to them.

I take this opportunity of laying before your readers some particulars of a case which has recently come under my observation, and which may be interesting from the appearances found in the liver, after death, in connection with an unusual and remarkable condition of the pericardium and diaphragm, throwing light on the question touched upon above.

I made the dissection to-day of a female, named Stallard, æt. 39, who has been under my care in the Cancer ward of the Middlesex Hospital for the last eight months. She suffered during that time from open cancer of the left breast, and had besides numerous scirrhus tumors, mostly of a small size, situated in different parts of the body. The cancerous ulceration of the left breast spread superficially; and all around it, from the clavicle to the lower margin of the chest, and from the sternum to the axilla, the skin and muscles were converted into a thick, nodulated mass of scirrhus substance, adherent to the ribs. When first admitted, the patient was observed to speak with a feeble interrupted voice, which became worse latterly; but it was not until a month before her death that her breathing became considerably oppressed. She then presented the symptoms of labouring under hydrothorax; and her feet and ankles swelled. She died greatly emaciated, worn out from the combined effects of dyspnœa and the extensive cancerous disease. My attention had not been drawn during her life-time to the condition of the alvine evacuations, further than to be informed that she was generally constipated. Upon questioning the nurse afterwards, it appeared that the faces had been commonly dark, without having any traces of blood mixed with them.

In describing the post-mortem examination, I need only advert to the points of interest in connection with the circulation of the liver. When the ribs had been sawn through, it was found necessary, before they could be lifted from the left side, to use the knife, in order to separate them from the lungs, to which they adhered. The cancerous structure of the exterior passed through the ribs and their cartilages, and involved the lung of the same side at its anterior and lower

parts. Upon exposing the right side of the chest, a large quantity of dropsical fluid escaped; and the lung, which was studded over its surface with numerous small scirrhus tumors, was collapsed, so as to have lost, as well as could be computed, about one-eighth of its natural bulk; otherwise, this lung, and the superior portion of that of the left side, appeared natural. At this stage of the dissection the appearance of the pericardium, which had been unavoidably opened in removing the sternum and ribs, presented a singular character. The heart itself was of average dimensions, and healthy; but the pericardium did not collapse as usual, so as to close upon the heart. Its walls were found to be rigid, and the sac had the appearance of a hollow case or basin, formed of solid material. The explanation of this peculiarity was soon apparent. It has been stated that the morbid structure affecting the exterior of the chest extended to the left lung, and converted its anterior and lower parts into the same kind of growth. On further examination, it was found that the disease had been communicated to the diaphragm also; and that the whole of the left side of this important muscle, from the margins of the chest to the spine, and reaching to the mesial line, was incorporated with the diseased lung, and converted into a scirrhus, nodular mass, quite immovable. It was accordingly owing to all the parts surrounding the pericardium having become involved in the malignant structure, and to that membrane adhering to them, that the walls of the cavity preserved their natural shape, without collapsing.

Directed by this appearance of the pericardium, and from considering that it must have been incapable, during life, owing to the change in its structure, to undergo those varieties in its relative dimensions which take place in respiration, and on which depend the differences in the velocity of the blood in the veins observed in connection with breathing, I looked with increased interest to the condition of the liver and its blood-vessels. The gland was free from any scirrhus tumors; and the orifice in the diaphragm for the transmission of the vena cava inferior was of its natural size. On the upper convex surface of the liver no remarka-

ble appearance was visible ; but, for an inch along the whole of the sharp anterior border, the colour of the gland was changed to a dark-greenish purple. Having raised the liver, so as to present its inferior surface to view, the same dark colour was observed to extend over every part of this surface ; but, instead of its being of a greenish-purple, it approached more nearly to jet-black. The same kind of appearance is not unfrequently met with in the more depending parts of the liver, owing to the blood gravitating after death to the under surface : but, in all my experience of post-mortem examinations, I do not remember to have seen the discolouration of the gland at once so deep and so extensively diffused as in this dissection. Again, looking to the veins of the abdomen which form the trunk of the vena portæ, they were congested in a remarkable manner ; in the mesentery more especially, the crowding of the numerous enlarged and dark-coloured trunks was such, that the membrane seemed to consist almost entirely of a thick tissue of veins. The intestines also partook of the deep colour produced by the congested state of these vessels.

In reflecting on this case, I cannot but connect together, as cause and effect, the change which has been described in the structure of the pericardium, with the congestion of the liver and of the veins of the viscera. It appears that, in consequence of the rigid state of the walls of the pericardium, this sac was prevented from undergoing those changes in its capacity which take place naturally in the successive acts of respiration : accordingly, that dilatation of its cavity during the act of inspiration, on which the operation of the peculiar power of suction, which has been shewn to come in aid of the common forces circulating the blood in the liver, depends, could not be produced : whence the blood, deprived of the assistance of this auxiliary force, was delayed in the gland, and, in a secondary manner, obstructed the flow of that in the veins of the viscera.

It will, perhaps, be objected to this explanation, that there is no necessity to have recourse to such an unusual cause as that which I have pointed out to account for appearances which are by no means uncommon. It may be said that the difficulty of breathing, from which the patient suffered for

some time previously to her death, was enough to explain the loaded state of the blood-vessels observed in the liver : for every pathologist is acquainted with the fact, that it is a frequent thing to find this gland congested in cases where the respiration is impeded. But it must be observed, on the other hand, that, in cases where the blood is preternaturally accumulated in the liver owing to difficult respiration, the congestion is general ; and it is exhibited most strikingly in the heart and lungs. Indeed, the commonly received explanation of the liver being congested in such cases is, that the blood cannot make its way freely out of the gland in consequence of its being collected in the lungs and heart to such a degree as to prevent the admission of any further quantity into the chest. Now, in the present case, the congestion was certainly not general. It was particularly observed, that neither the heart nor the lungs were in that condition. On the contrary, the heart was of moderate size, and contained only the average quantity of coagulated blood ; while the lungs, more particularly the right, were rather pale, and of small specific gravity, than otherwise. In short, the partial nature of the congestion—its being confined so manifestly to the hepatic circulation—was the principal circumstance in the dissection which led me to conclude that the cause was of a specific kind—such as that which I have pointed out—and not a general one.—I am, sir,

Your obedient servant,

ALEXANDER SHAW.

23, Henrietta Street, Cavendish Square,
Sept. 1842.

CASES OF

ACUTE HYDROCEPHALUS

TREATED BY HYDRIODATE OF POTASS.

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To the Editor of the Medical Gazette.

SIR,

I TRUST you will find space in some early number of your valuable periodical for the insertion of the following brief history of three cases of acute hydrocephalus, in which hydriodate of potass was found decidedly useful. Perhaps this medicine has been administered by other persons in the same disease—most likely it has in the chronic form, but I do not recollect to have

seen any account of its exhibition in these cases in any of the medical journals, or elsewhere. Each succeeding day that I live, I see more and more cause for disapprobation of what is called routine practice, more especially, indeed, as regards the abstraction of blood and the use of purgative medicines, by which proceedings I am convinced a great many of our fellow-creatures are consigned to an earlier grave than might have awaited them, but for these means misapplied. Witness, for instance, the indiscriminate use of the lancet in apoplectic and paralytic seizures, as admirably alluded to in a late publication by Dr. Holland, in the chapter on those subjects. With me, sir, the opinion is grounded on nearly twenty years' experience, and I suspect that the observation will apply even more closely to children of tender years than to adults. Helpless, and unable to express clearly their own feelings, wishes, or opinions, should they have any, they are the easier victims of the routine I have alluded to. In no disease is venesection more generally misused than in the hydrocephalus of children, though the remedy, practised with decision, is of the highest efficacy in the onset of the acute form. The disease, however, is very often of mixed character—very often complicated with some serofulous degeneration, as is admitted by Golis, Cheyne, Forney, and others; and these facts should surely make the routine practitioners somewhat more cautious in the practice of blood-letting than they usually are. Moreover, bleeding in the advanced stages of the disease, the excessive smearing with mercurial ointment, together with the reckless exhibition of calomel to the last hour of life, are measures of very questionable utility, and by no means, as some author says of digitalis, likely even "to soften the pillow of death." But without further prelude, sir, allow me to state that 17 or 18 months ago, two cases of acute hydrocephalus, in children about a year old, were in progress of treatment, by my partner, Mr. Chinery. He had had recourse to bleeding with moderation—so with mercurials and other remedies proportioned to the strength and powers of the little patients, and the whole of the treatment had been conducted on rational principles. The gums had been freely scarified, though there was no

evidence that the cerebral irritation was immediately connected with dentition. One of the children had rather a large head, and might have been the subject of some chronic disease on which inflammatory action had supervened, and the child was certainly of a serofulous diathesis; not so with the other. It was previously healthy, born of healthy parents, had gone through the usual symptoms described by authors as appertaining to acute hydrocephalus, and had been treated accordingly; but despite of all measures was apparently in a dying condition. The mother, though fondly attached to her child, was exceedingly averse, conceiving its entire inutility, to making any further trial of medicine; and I should say that medicine of any kind was only got into the stomach by putting it far back on the tongue, and depressing the organ till deglutition was unavoidably accomplished. This child, in addition to strabismus, laboured respiration, convulsions, and other symptoms, supposed by some to be indicative of effusion, had for several days together complete opisthotonos, the body being stiffly arched from the occiput to the ossa calcium. Both children were occasionally convulsed, comatose, and miserable for days together, and in this condition I suggested a trial of the hydriodate of potass, in half grain-doses, every two or three hours. The only visible effect of this, in connection with the rapid improvement of both children, was considerable diuresis, and in one, much saliva dribbled from the mouth. Both recovered perfectly and speedily, and are living and healthy at this time.

An equally well-marked case has occurred to me more recently. On the 10th of May last, I visited the infant child of a small farmer, on the borders of the New Forest. The child, about 14 months old, robust and previously healthy, exhibited the usual symptoms of pyrexia. Considering that dentition might be the source of irritation I lanced the gums freely, and as the bowels were costive, directed a purge of calomel and jalap. The next day the child had become more feverish, occasionally screaming, and exhibiting annoyance at light. The tongue and breath were foul; the pulse quick and varying; the countenance flushed; and the scalp very hot. Leeches were applied to the temples and a cold lotion to

the head, and in the evening, the respiration being laboured, and the more especially as crepitation was observed over the right lung, four leeches were applied below the clavicle, a nauseating mixture was prescribed, and the calomel purge repeated. After this the breathing was somewhat better, but the febrile symptoms continued. On the 12th and 13th, the child remained in very much the same state, but nearly insensible to objects around it. The bowels obstinately costive; the evacuations that were sparingly obtained from them by different medicines were of a dark colour. A blister was applied to the nape of the neck, calomel was administered every four or five hours, and a mixture of nitre and acetate of ammonia.

On the 14th, extreme stupor seemed to overwhelm the child; the pulse, which throughout had been very quick, became more irregular and indistinct, and a clammy sweat overspread the body.

On the 15th, the pupils were dilated and immoveable, and insensible to light. There was complete paralysis of the right side, while the limbs of the left were in constant tremulous motion, the hand being frequently drawn to the head with an undulatory automatic movement. This state of things continued to the 18th, with occasional convulsions and almost entire insensibility. Wine had been administered without benefit, and I do not know how it was that I did not prescribe the hydriodate of potass a day or two earlier, for the effects of that medicine, in the two cases before alluded to, had made a considerable impression on my mind at the time. Without much expectation of doing good in this case, I prescribed the medicine as before, and with precisely the same results; not indeed instantaneous, but as an observant grandmother remarked, it appeared to improve with each dose of the medicine; the only appreciable effects being a speedy diuresis and dribbling of saliva.

I do not purpose attempting an explanation of the *modus operandi* of the hydriodate of potass in these cases. To this day, sir, pathologists are not agreed about the disease in question. I suppose it is admitted on all hands that water is not the disease; but the character of the inflammation, even

whether it be in all cases inflammation at all, or venous engorgement, or ramollissement, or debility, seems to be matter of difference. The symptomatology, too, is obscure. The best authorities, Abercrombie, and others, admit that they cannot make a sure diagnosis between meningitis and inflammation of the cerebral substance. Again, the so-called signs of effusion, though enumerated so elaborately by Golis and many of the older writers, sometimes exists without any effusion at all, and therefore are in no way diagnostic. In short, much uncertainty prevails. Whether the hydriodate of potass was beneficial in these cases by revulsion, as an evacuant, or by aiding the absorbents, (for their existence within the cranium is I believe allowed), I know not: or was it by goading into action the mercury which had been previously taken? Some have fancied such a process, and it is worthy of note that, in two of these cases, salivation occurred. The utility of the hydriodate in various diseases, cutaneous, rheumatic, dropsical, and others, is well known to most practical men; but its administration in these hydrocephalic instances is, I believe, new; and I would only call the attention of your readers to the fact, that in a state in which the most characteristic symptoms of the last stage of acute hydrocephalus were present, the aforesaid effects were produced, and death was apparently frustrated. The symptoms disappeared. In each case the disease gave way just in like manner as the autumnal forest mist is dispersed by the morning sun, and the little patients most unexpectedly recovered. If, in the hands of other medical practitioners, in cases of acute hydrocephalus, where bleeding and the usual remedies have been judiciously had recourse to in the early stage, unavailingly, similar effects to those here narrated should be noticed on a trial of the hydriodate of potass in the latter stage of the disease, I feel assured that the pages of the *MEDICAL GAZETTE* will ever offer a ready channel of communication on so important a subject.—I remain, sir,

Your obedient servant,

CHARLES FLUDER.

Lymington, Hants,
Sept. 7, 1842.

MEDICAL GAZETTE.

Friday, September 30, 1842.

"Licet omnibus, licet etiam mihi, dignitatem
Artis Medice tueri; potestas modo veniendi in
publicum sit, dicendi periculum non recuso."

CICERO

HINTS TO PUPILS.

THERE is a well-known adage which asserts that the by-stander sees more of the game than the players. This is an exaggeration; yet it is certain that he sees many points which they overlook. Now, life is a kind of game, as Dr. Franklin observes, and the rule is applicable to its struggles. Hence, no part of our duty has ever appeared to us more useful than the addressing a few words of advice to young medical students; embarked, as they frequently are, on the troubled ocean of London life, with scarce a friend to aid them in its navigation.

The first error which the student often commits is the parent of a hundred more. We mean the mistake of leading an isolated life in lodgings, instead of becoming an integral part of a family, if it be at all in his power to do so. It is so obvious to every man of penetration, that a solitary existence blunts the feelings, without sharpening the intellect, and offers a cloak for every irregularity and every form of idleness, that we cannot express ourselves too strongly against it.

If, indeed, an abode can be selected for the student, where the head of the family is a man both of probity and talent; where domestic happiness is the pledge of sound principles, and professional success of professional knowledge; where instruction is not dry, nor relaxation coarse, it would be difficult to suppose that the most careless father would hesitate to confer such a boon upon his son. But if so golden an opportunity does not present itself, lesser

advantages are not to be scorned. Without shining talent, a man may yet be a useful guardian; and even the humblest roof, when pillared by sobriety and good temper, may afford a creditable asylum. In short, any decent family must be better than a mere lodging-house. The great modern painter of London life, in its less elegant phases, has scarcely exaggerated either the habits or the dialect prevalent in some of these unfit receptacles for medical pupils.

The next point is to select a good medical school; and here an impartial friend would be of infinite advantage. He would warn the beginner against all schools whose sole merit is the lowness of their terms, or the facility with which certificates are granted.

Nor is it a slight objection to a school, that the most practical branches of our art are taught there by men of no great practical reputation. The ambitious student will naturally seek the best schools, when he is informed how frequently the mantle of an eminent teacher has fallen upon his disciples; so that medical fame seems to have descended from one generation to another, not by the accident of birth, but by the elective affinity of genius. By the regulations of the Society of Apothecaries, the student, during his first winter session, must attend a hundred lectures on chemistry, and a hundred on materia medica and therapeutics; and since "the number of lectures on anatomy and physiology, and of anatomical demonstrations, must be in conformity with the regulations of the Royal College of Surgeons of London, on these subjects," there will be, at least, 140 of the former, and 100 of the latter. This makes 440 lectures, or an average of about three a day; and if he should happen to dissect, and attend the surgical practice of an hospital, during the same period, his time will

be most fully occupied. For, in addition to the seven or eight hours a day spent in this manner, several will be taken up in reading over his notes of lectures, and referring to his text-books for further information. It is plain that the best lectures are merely a summary of the subjects on which they treat, and that it is, consequently, an important part of the lecturer's office to refer his auditors to the best monographs and systematic treatises. So diligent a course of study, however, is easier on paper than in reality. Too often it happens that the student, accustomed to little save the easy details of practical pharmacy, sinks under the heavy load, or, in truth, has not even energy enough to attempt to sustain it. It is certainly difficult to arrange a plan for the simultaneous pursuit of so many studies without clashing; but a Gordian knot, hard to untie, is often easy to cut, and the process is sometimes applied to lectures and hospital attendance. Now, one of the advantages which must result from the residence of the student in a quiet professional family is, that this wholesale avoidance of every object for which he came to town can hardly take place. The head of the family, who will not consider himself as the mere keeper of a boarding-house, but as the guardian and teacher of the students confided to his care, can easily ascertain whether their attendance on lectures is gradually sinking into a merely nominal one, or whether their diligence is as great as their strength and capacity will allow. Such a man will lighten their toils by those hints which are better imparted in familiar conversation than in formal discourses—thus contributing to bring their studies within the limits of possibility. He will warn them that, for the present, their attention must be directed solely to professional pursuits; and that mere

science or literature, however attractive, must be placed in the background:—

All superfluous branches
We lop away, that bearing boughs may live.

Even chemistry, therefore, must be restrained within certain limits, particularly by those students who are confined to the minimum of time indicated by the Worshipful Society. Those who can extend their studies over a longer period than three winter and two summer sessions, will find it highly profitable to do so. The Apothecaries' Regulations ordain that this may be done, "provided the lectures and medical practice are attended in the prescribed order, and in the required sessions." In the prescribed order they may certainly be attended; but if spread over a longer period, how can they all be attended in the required sessions? The Regulations contain another apparent contradiction. It is stated, at one place, that the attendance of the student is required at an hospital for eighteen months; but, at another, the choice is given him to attend twelve months at an hospital, and six at a dispensary. Those who are cramped for time should attend for the short period of eighteen months at an hospital; while those who are not so limited, and who desire to learn the practice of physic in all its varieties, should attend a dispensary likewise, where they will find that the general run of cases, and the relations of the patients, bear a greater resemblance to ordinary private practice.

Our readers will have observed that St. Luke's Hospital has lately been thrown open to pupils, with the restriction, that no one shall be admitted who has not studied his profession for four years, or attended the medical practice of an hospital for eighteen months. In most cases, we should think the best time for making use of

this privilege would be after the pupil has passed the Hall and College, and is seeking the means of completing his professional education. He will find a sound knowledge of the varied forms of insanity of the highest utility in his medical career. Most practitioners have hitherto had few or no opportunities of acquiring this, and it is a very important addition to the treasures of knowledge offered to the next generation.

It is to be hoped that improvement will not stop here, but that the Fever, the Small-pox, and Lying-in Hospitals, those comparatively sealed deposits of inestimable information, may likewise hear the "Open, Sesame!" of reform.

One word more. We would strongly recommend each and every student to try his chance for the prizes so liberally offered at almost all medical schools; yet, as the vanquished must be far more numerous than the victors, we would still more strongly urge the less successful not to despair. Another time they may be more fortunate; or, should this not be the case, let them be consoled by the reflection that unremitting diligence is certain to carry off some prizes in life. Though the gold and silver medal be borne away by more brilliant competitors, industry never fails of its reward. Let them not spurn what it bestows:—

*Non possis oculo quantum contendere Lynceus,
Non tamen idcirco contemnas lippus inungi;
Nec quia desperes invicti membra Glyconis,
Nodosâ corpus nolis prohibere chiragrâ.*

Hor. Ep. Lib. i. 1. 28.

We do not think it right to speak of individual schools; but for them refer to the advertisements on our wrapper; and we shall next week take leave of the subject by some general observations on medical education.

INSPECTORSHIP OF ANATOMY.

DR. SOMERVILLE has ceased to hold the appointment of Inspector of Ana-

tomy, and is to be replaced by Mr. Bacot and Mr. Rutherford Alcock.

We understand that considerable alterations are to be made in this department. The mere procuring of bodies, and their removal, are to be entrusted to subordinate officers, while the inspectors are to see that proper objects are procured—that the business of dissection is conducted with propriety—and that the remains are interred.

OUR VOLUMES FOR 1842-3.

THE arrangements which we have made for the ensuing volumes are such as, we think, will be creditable to the journal and satisfactory to our readers.

In our next number we shall give the first of a course of lectures on Midwifery and the Diseases of Women and Children, by Dr. Robert Lee; and, in a few weeks, commence a selection from the Physiological Lectures of Dr. Knox, of Edinburgh, which, but for unavoidable circumstances, should have appeared last year. It is also intended to give a short series of six or eight lectures on the Pathology of the Urine, by Dr. Golding Bird, and clinical observations from various quarters, beginning with those of Dr. Lawrie, of Glasgow.

DEATH OF DR. FRAMPTON.

WE have to announce the decease of Dr. Frampton, who died at his house at Hackney, on Wednesday, Sept. 21, 1842, in the 77th year of his age.

He was the eldest son of the Rev. Algeron Frampton, incumbent of the parish of Tokenham, in Wiltshire, and was born on the 7th of January, 1766. He received his early education at Marlborough, whence he proceeded to St. John's College, Cambridge, in the year 1783. His success at the University was most brilliant. He took the degree of Bachelor of Arts in 1787, and obtained the second place in the Tripos:

his fellow collegian and friend, the late Sir Joseph Littledale, being the senior wrangler of the year. He afterwards became a lecturer at, and subsequently fellow of, his College; and in due time filled the office of Moderator in the University.

In order to acquire a knowledge of medicine, he spent two years at the University of Edinburgh, and subsequently studied in London, first at St. Bartholomew's, afterwards at the London Hospitals. He took his degree of M.D. in 1797, and became Fellow of the College of Physicians; of which body he filled the office of Censor, and for many years before his death was one of the Elects.

In the year 1800 he succeeded the late Dr. Fox as one of the physicians to the London Hospital, which office he held for forty years, paying most unremitting attention to its duties; until about two years since, when his infirmities compelled him to resign.

He rapidly obtained an extensive private practice in and around the eastern parts of the metropolis; and at one time enjoyed an eminence not inferior to that of any of his contemporaries. He was one of the original members of the Medico-Chirurgical Society, but the engagements of a very active life prevented his becoming a contributor to its Transactions; and it is to be regretted that he did not find leisure to make known, through any other channel, the results of his ample experience.

For several years before his death he had been much afflicted by rheumatism and gout; and for the last two had laboured under enlargement of the prostate, which, for a time, occasioned retention of urine, and confined him to his bed, from which he never again rose; for though much relieved in this last complaint, his other infirmities had brought him to a very helpless condition. He retained his mental faculties and senses unimpaired to the last. A failure of appetite caused a rapid decline of strength, and gradually sinking, he closed a long life of activity and usefulness on the 21st of September, 1842, expiring almost without a struggle.

Dr. Frampton was an excellent practical

physician, and as such was highly esteemed by his professional brethren. He was mild and unassuming in his manners, kind and benevolent in disposition. He was beloved by his family, and highly valued by his friends, by whom his memory will long be cherished.

ANEURISM OF THE EXTERNAL ILIAC ARTERY—

LIGATURE OF THE VESSEL CLOSE TO THE BIFURCATION OF THE COMMON ILIAC ARTERY.

BY MR. BELLINGHAM.

MATTHEW DALY, aged thirty-two, a slender and healthy man (in other respects) was admitted into St. Vincent's Hospital August 18, 1842, under my care, labouring under aneurism of the external iliac artery on the right side. He has never suffered from any illness of consequence; had been in the habit of drinking, but has given it up for the last two years. He is a brush-maker by trade, and his occupation consists in constantly turning a lathe with the right foot. He continued to work until three or four days previous to his admission, under the impression "that the disease would wear away."

The aneurism is of about three months' duration. His attention was attracted to it by the swelling, which at that time (he says) pulsated strongly. It was, however, quite unattended by pain, and it has increased slowly in size. Recently, he has begun to suffer pain of a dull, aching kind in the part, which obliged him to give up work, and to seek admission into hospital. He has never received any injury in the part, or ever strained himself that he recollects.

The aneurismal tumor is about the size of a moderately-sized orange, but more oval in shape, seated above Poupart's ligament, and extending about half an inch below it. A very strong impulse is communicated to the hand placed on it, but no fremitus. Immediately below Poupart's ligament, however, there is a slight fremitus, and on applying the stethoscope a loud single bruit is heard. There is no swelling or œdema of the foot; the circulation is perfectly regular and tranquil, and the heart's action natural.

In consultation with Sir Philip Crampton and Mr. Cusack, it was determined to place a ligature upon the common iliac artery on the right side; as it was supposed there would not be found sufficient room between the aneurism and the division of the common iliac, the external iliac being

probably diseased above the aneurismal tumor.

A purgative draught was given on the night before the operation, and a cathartic enema administered the following morning, by which the bowels were well cleared out; an hour before the operation the patient took forty drops of laudanum.

The patient being placed on his back, slightly inclined to the sound side, having the thorax elevated, and the thigh bent up the pelvis, I commenced the operation (assisted by Sir Philip Crampton, Mr. Cusack, and Professor Porter) by a semi-circular incision, beginning on a line with the last rib, and terminating nearly opposite the anterior and superior spinous process of the ileum, and about an inch and a half internal to this process. Its length was about five inches, and the concavity towards the umbilicus; by this the integuments and superficial fascia were divided; the fibres of the external oblique muscle were then incised in the same direction, and next those of the internal oblique; by which the transversalis muscle was exposed. A cautious incision was made through the fibres of this muscle at the lower part of the wound, and a director endeavoured to be introduced under them. This muscle, however, was found to be considerably hypertrophied, being double or treble its natural thickness. On arriving at the transversalis fascia, it also was found to be increased considerably in thickness, and presented almost a tendinous character. A portion of it was raised with a forceps, and cautiously incised; a director was then introduced, and an incision made sufficient to admit the finger, upon which this fascia was divided by a probe-pointed bistoury, both upwards and downwards. No artery was divided in this part of the operation requiring a ligature; the bleeding appeared to be altogether venous.

The peritoneum was now very cautiously raised from the subjacent iliac muscle by insinuating the fingers behind it, and this proceeding appeared to give much more pain than was expected. As the peritonæum was detached, Mr. Porter, with his hand in the wound, drew this membrane and the intestines towards the opposite side; the separation of the peritoneum was continued until my finger reached the upper extremity of the external iliac artery; and the expected difficulty from the protrusion of the intestines was much less than had been anticipated. After a short time I succeeded in getting a view of the vessel, and, as it appeared to be perfectly healthy, its sheath was opened to a small extent by means of the blunt extremity of a director; and Mr. Trant's aneurism needle was then passed under the artery, from without inwards, without much difficulty; and here the ad-

vantage of his instrument was fully proved, for as soon as the eye of the needle appeared at the opposite side of the vessel, the ligature was drawn up by it, which, owing to the depth of the wound, and the distance of the artery from the surface, must have been attended with delay and difficulty, if the common aneurism needle had been employed. A single silk ligature was used, and as soon as it was tightened the pulsation in the aneurism ceased. The edges of the incision were then brought together by the interrupted suture and adhesive plaster; the patient was placed in bed, and took sixty drops of laudanum. The operation was completed in less than thirty-five minutes.

Eight o'clock P.M., reaction has completely set in; both lower extremities feel warmer than natural; he has a little thirst. Pulse eighty, and has had some sleep since the operation.

August 27th.—Slept well last night; no pain any where except in the wound; no tenderness on pressure over the abdomen; no sickness of stomach: some thirst; wishes for something to eat; pulse seventy-two; temperature of the ham, on right side eighty, on left ninety.

28th.—Did not rest quite so well last night; was annoyed by distension of the abdomen from flatulence, which occasionally gave him pain; pulse seventy-six; no thirst, nor pain on pressure over any part of the abdomen; the aneurismal tumor appears to be somewhat diminished in size.

29th.—Pulse seventy-two; slept comfortably last night; feels hungry, and wishes for some solid food; temperature of both limbs similar. The wound was dressed to-day; the lower portion has united by the first intention; water dressings and adhesive plaster applied; sutures not disturbed. As the bowels have not been moved since the operation, a little castor oil was directed to be administered immediately, and repeated at intervals, until it operated.

30th.—Bowels moved freely; feels more comfortable since; no tension or uneasiness in the abdomen; the aneurismal tumor appears to be more solid.

31st.—Wound suppurating freely; no thirst; appetite good; temperature of both limbs equal; pulse eighty. Ordered some weak chicken broth.

September 2nd.—He complained last night of pain over the middle sternal region, increased on inspiration. A mustard cataplasm was applied, and this morning the pain is much relieved; his pulse was slightly increased in frequency, about eighty-eight; in every other respect his condition is satisfactory.

5th.—The wound was dressed with charpie to-day; the discharge is abundant, and of a good quality; healthy granulations are

springing up from the bottom; the upper and lower portion of the incision have united by the first intention; pulse regular; no thirst; appetite good; has eaten chicken for his dinner the last two days.

8th.—The wound has contracted considerably, and the discharge is diminishing; he sleeps well, and says he has not felt so well since the operation; no pulsation can be felt in the femoral or anterior tibial artery; he eats mutton chop for dinner with appetite.

13th—19th day.—The aneurismal tumor within the last day or two has become painful when pressed about the centre, and its contents at this point are evidently more fluid than before; he also suffers from a feeling of distension in the part; otherwise he is in very good health, eats his breakfast and dinner with appetite, and has been allowed porter for some days. The ligature is not yet loose, and it gives him pain when it is gently pulled.

15th—21st day.—To-day the dressings were found to be deeply coloured with blood, and, on examination, a small orifice was detected at the inferior angle of the wound, through which a mixture of pus and blood could be squeezed. The aneurismal tumor is smaller and less tense, a portion of its contents having been evacuated in this way.

16th—22nd day.—The discharge of pus and blood continues, but in diminished quantity, and the aneurismal tumor is much smaller. The ligature was gently pulled to-day, when it yielded a little. This proceeding, however, caused, apparently, very great pain, which was referred to the hip.

17th.—A feeble pulsation detected to-day in the femoral artery high up in the hip; none in the anterior tibial.

18th—24th day.—The ligature came away this morning without any pain, and was not followed by the discharge of a drop of blood. The wound is very much diminished in size, having filled up by granulation nearly to level with the skin, except at the point where the ligature presented. His health is very good; he eats heartily, and sleeps well; the aneurismal swelling is diminished in size; but the integuments at one point covering it, are discoloured and thinned, and its contents at this part are very fluid.

FREDERIC'S HOSPITAL AT COPENHAGEN.

PROF. BAUG'S METHOD OF TREATING FEVER.

THE remedies which Professor Baug uses are as follows:—

1. *Pure fresh air.*—He takes care that a

continuous stream of fresh air shall surround the patients in their wards. Hence the windows are kept open immediately over the bed in which the patient lies on a mattress; at any rate as long as the violence of the fever requires this cooling method.

2. *Cold water.*—The heads of all the patients are covered with linen steeped in cold water; they are allowed to drink as much cold water as they like; and when stupor, fierce delirium, and other signs of congestion towards the head, predominate, the head is held over the edge of the bed, and several pitchers of cold water are poured over it. If the skin is very hot, affusion is sometimes employed over the whole body, but more usually it is merely washed with the cold water. If a dry skin is accompanied by nervous symptoms, tepid baths are prescribed, together with cold fomentations or affusions.

3. *Refrigerating and mucous beverages* alone are permitted.

4. *Emetics* are given, when vertigo and a bitter taste in the mouth occur together, and when they are not contra-indicated by real weakness, great stupor, or any local inflammation, particularly of the abdominal organs; but if these symptoms are present in a slight degree only, or have been mitigated by bleeding, the Professor finds emetics advantageous, and the more so, the sooner they are given.

5. *Venesection* is rarely employed, and only when important inflammatory congestions towards the nobler organs are present; in general, leeches only are used, or, when they are not to be had, cupping. If the cold affusions do not fulfil their object, or when general plethora threatens congestion towards some other organ, then, even if the head has become tolerably clear, six or eight leeches are applied twice or thrice to the temples; and if there are fixed pains, or a constant disturbance of function in any thoracic or abdominal organ, from ten to twenty leeches are applied in its neighbourhood.

6. *Sinapisms* are always applied to the soles of the feet; and blisters are often placed on the back of the neck, the chest, the abdomen, &c.

7. *Laxatives* are frequently prescribed. When the emetic has not purged at all, or but little, they are given on the following day, and repeated according to circumstances. Those usually selected are Epsom salts, or rhubarb with sal ammoniac, or from ten to twenty grains of calomel, or castor oil, or clysters.

8. *Mineral acids* are used in refrigerant drinks, to subdue either noxious secretions or septic (putrid) symptoms.

Of the remaining digestive remedies, nitre

and cream of tartar are prescribed, the latter either alone, or together with the former; more rarely a saturated solution of acetate of potash is given to check vomiting.

Cinchona, camphor, valerian, musk, ether, &c. are rarely required; they are indicated by septic and nervous symptoms, and then musk is the best remedy.

As to single symptoms, they are, of course, treated in various ways; against the majority, leeches and blisters are employed with advantage. Dangerous diarrhoeas are treated at the commencement with ten grains of calomel or with castor oil, first in larger, then in smaller doses, to assist the evacuation of injurious matter; afterwards with clysters of infusion of chamomile; and if the diarrhoea continues, and is accompanied by pain, it is treated with leeches. Blisters and tartar emetic ointment are often indicated. Of late, especially when the fever has been a real abdominal typhus, the Professor has given acetate of lead, combined with vegetable carbon, with good effect; the dose being half a grain of the former with five of the latter, and ten grains of starch, from four to six times a day. He has found the regular astringents more useful in the form of clysters, (*e. g.* two or three grains of opium) than when given by the mouth. The mucilage of gum arabic with a few grains of sal ammoniac seems the least injurious remedy. Convalescence is best left to nature. The results of this treatment are so favourable, that out of 6140 patients whom Professor Baug treated from 1826 to 1835, (among whom were nearly 1440 cases of typhus) only 340 died, including those who were moribund when brought into the hospital.—*Zeitschrift für die gesammte Medicin.*

RECEIVED FOR REVIEW.

Lectures on the Elementary Composition of Foods, considered in reference to their Nutritive Qualities. Delivered at the Establishment of the Pharmaceutical Society. By Jonathan Pereira, M.D. F.R.S. and L.S. &c.

A Statistical Account of the principal Diseases which have occurred among the Children admitted into the Royal Military Asylum, Chelsea. By Samuel G. Lawrance, Surgeon to the Institution.

Therapeutic Manipulation: or a Successful Treatment of various Disorders of the Human Body, by Mechanical Applications. By Govert Inde Betou.

A Treatise on the Enlarged Tonsil and Elongated Uvula, in connexion with Defects of Voice, Speech, and Hearing. By James Yearsley, M.R.C.S. &c.

Proceedings of the Philosophical Society of Glasgow. Fourth Session, 1841-42.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

Thursday, September 22, 1842.

Parkinson Oates, Thorne, Yorkshire. — John Goodchild, London.

A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, September 17, 1842.

Small Pox	8
Measles	20
Scarlatina	35
Whooping Cough	15
Croup	7
Thrush	9
Diarrhoea	40
Dysentery	5
Cholera	5
Influenza	1
Typhus	32
Erysipelas	3
Syphilis	0
Hydrophobia	0
Diseases of the Brain, Nerves, and Senses ..	134
Diseases of the Lungs and other Organs of Respiration	216
Diseases of the Heart and Blood-vessels ..	23
Diseases of the Stomach, Liver, and other Organs of Digestion	89
Diseases of the Kidneys, &c.	8
Childbed	2
Ovarian Dropsy	0
Disease of Uterus, &c.	2
Rheumatism	3
Diseases of Joints, &c.	4
Ulcer	0
Fistula	0
Diseases of Skin, &c.	0
Diseases of Uncertain Seat	125
Old Age or Natural Decay	48
Deaths by Violence, Privation, or Intemperance	27
Causes not specified	3
Deaths from all Causes	864

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude $51^{\circ} 37' 32''$ N. Longitude $0^{\circ} 3' 51''$ W. of Greenwich.

September.	THERMOMETER.	BAROMETER.
Wednesday 21	from 37 to 58	29.45 Stat.
Thursday . 22	35 56	29.44 to 29.45
Friday . . 23	41 55	29.46 29.40
Saturday . 24	48 56	29.34 29.39
Sunday . . 25	49 59	29.51 29.63
Monday . . 26	49 59	29.76 29.87
Tuesday . 27	48 53	29.84 29.89

Wind, S.E. and S.W. on the 21st; N.W. and N. on the 22d; S.W. on the 23d; since N. and N.E.

The 21st clear, since generally cloudy and showery, at times heavy rain.

Rain fallen, 1 inch and .085 of an inch.

CHARLES HENRY ADAMS.

WILSON & OGILVY, 57, Skinner Street, London.

THE
LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, OCTOBER 7, 1842.

LECTURES
ON THE
THEORY AND PRACTICE OF
MIDWIFERY,

*Delivered in the Theatre of St. George's
Hospital,*

BY ROBERT LEE, M.D. F.R.S.

—
Introductory Lecture, Oct. 3, 1842.

GENTLEMEN,—There are many diseases peculiar to women; they are all exposed to great suffering and danger during pregnancy and child-bearing, and many die from the acute disorders which follow delivery. Not only are the functions of the uterine system before conception often disturbed, but all the different parts of this system undergo morbid alterations of structure, which are frequently of a malignant nature, and excite, in their progress to a fatal termination, the most acute and protracted pain.

During the whole period of pregnancy, women are exposed to numerous accidents and diseases which endanger life; but it is in labour that they incur the greatest hazard, and endure the most intense suffering. The contents of the gravid uterus are expelled by a process which displays, in every stage, the most skilful contrivance, and in a great proportion of cases it is completed with safety both to the mother and child by the unassisted powers of nature. As soon as labour has commenced, the orifice of the uterus begins to open, that the child may pass through it, and the upper part contracts at intervals, with an amazing degree of regularity and force, till the whole ovum has escaped, and the great arteries and veins exposed by the separation of the placenta are effectually closed.

But this, like all the other functions of the animal body, is liable from various causes to great and sudden disturbance, or complete

interruption. The uterus may not possess the requisite power to expel the child; or, having done so, and the placenta also, its nervous energy may be insufficient to secure the permanent contraction of its walls, and blood may flow into the cavity till it is distended, and death take place before any apprehension of danger has been roused. Or the head of the child may be so large, or the pelvis of the mother so small or distorted, that it is impossible for delivery to take place, and the uterus and vagina be destroyed by the long-continued pressure they sustain; or lacerated, and the child forced through the rent into the peritoneal cavity. In other cases labour is rendered difficult and dangerous by the unfavourable position of the child within the uterus. Instead of the head presenting, or coming foremost, an arm descends, and the body of the child is placed across the pelvis, so that the longer and more forcibly the uterus contracts upon it, the more firmly are the shoulder and thorax impacted in the pelvis, and the more difficult does the operation of turning become.

The placenta, which usually adheres to the upper part of the uterus, is sometimes attached to the cervix or lower part, and then a dangerous flooding ensues, which nature has no power to arrest. The means she usually employs for the suppression of uterine hæmorrhage, if exerted in this case, would only aggravate the evil; and if artificial delivery were not performed, death would inevitably follow. The same is the consequence when the placenta has been detached from the upper part of the uterus, and where hæmorrhage follows the birth of the child; and not less destructive are the effects produced by the retention of the whole, or portions, of the after-birth within the uterus.

There are many other varieties of difficult and complicated labour, in which the unaided powers of nature are insufficient for the completion of delivery, and where the most

prompt and energetic and well-directed treatment is required to avert the danger. Even after the most easy and natural labours, when none of these accidents have occurred, and when all danger is apparently at an end, how often does inflammation of the uterus unexpectedly supervene, and run its course with a rapidity and violence equal to that of plague and cholera.

That such occurrences are not uncommon, the Reports of public institutions in different countries afford too abundant proof. 219,333 women were delivered in the kingdom of Wurtemberg, from the year 1821 to 1825, of whom there died 1248, or one in 175. At Hamburg, 5·57 women die in 1000 who have been pregnant or delivered. Of 448,356 females who died in the Prussian States in the course of fifteen years, between the ages of 14 and 45,—70·215, or nearly one-sixth, died either immediately in the act of delivery, or in childbed; and of 108 of the infants born, 1 in 108 cost the mother her life. In the mortality table for the city of New York for a period of thirty-two years, viz. from 1805 to 1836, both inclusive, it is stated that the births during this period ranged from 2 to 300,000; and that the whole number of deaths from childbed were only 1038. In the Dublin Lying-in Hospital, from 8th day of December, 1757, to the 31st day of December, 1832, there were 132,979 women delivered, of whom 1488 died. Of 16,654 women delivered in the same institution during a period of seven years, commencing November 1826, there were 1956 difficult cases, and of these 164 proved fatal. There were 409 preternatural presentations, 24 cases of uterine hæmorrhage before the birth of the child, and 64 between the expulsion of the child and placenta; 66 of retention of the placenta; 30 of puerperal convulsions; 240 of twins, and 4 of triplets; 97 of prolapsus of the funis; and 88 of puerperal fever, 56 of which were fatal. In the British Lying-in Hospital, Brownlow Street, 33,627 women were delivered between the year 1749 and 1824, of whom 433 died. In the first ten years 1 in 42; in the second ten years 1 in 50; in the third ten years 1 in 53; in the fourth ten years 1 in 60; in the fifth ten years 1 in 288; in the sixth ten years 1 in 231; in the seventh ten years 1 woman in 274. During the last fifteen years, in public institutions and in private practice, I have seen 55 cases of difficult and protracted labour, in which recourse was had to the forceps: above 100 in which delivery was effected by the operation of craniotomy, distortion of the pelvis being the most common cause of the difficulty: 35 in which premature labour was induced: 62 cases of arm presentation: 36 in which the placenta was adherent to the neck of the uterus, and 38 in which it was detached from the fundus,

and produced dangerous hæmorrhage: 7 fatal cases of retention of the placenta, and 19 in which great difficulty and danger were produced by portions of the placenta, or the entire mass, being left within the uterus beyond the usual period: 46 labours complicated with puerperal convulsions, and upwards of 250 of puerperal fever, or inflammation of the uterine organs in the puerperal state. Written histories having been preserved of these cases, they have now been collected and arranged for publication, in the hope that they may be found to illustrate, confirm, or correct, the rules laid down by systematic writers for the treatment of difficult labours, and supply that course of clinical instruction in midwifery, the want of which has been so often experienced by practitioners at the commencement of their career.

When women are attacked with puerperal convulsions, or flooding, or when any of the accidents occur during labour which have now been mentioned, they are wholly unable to make any effort to save themselves, and are placed in the same unconscious and helpless condition as those who have apoplexy, or concussion of the brain, or who are suffering from a violent external injury, or extensive wound, with great loss of blood. In no country in the world are women left to die in such circumstances without help; and in the most remote and barbarous ages, means, however rude and imperfect, have always been employed during the sufferings and dangers of child-bearing.

At first, females were solely employed for this purpose. The descendants of Abraham, while a wandering tribe, had midwives, and the Israelites continued to employ them while they remained in Egypt; and it is probable all the surrounding nations did the same, as they now do everywhere in the East. At what period, and in what country, physicians and surgeons were first consulted in cases of difficult labour, and in the diseases peculiar to females, is not known, but it is certain they were so in Greece at the time of Hippocrates, and that great attention was then given to all the different branches of midwifery. His works contain an account of many facts respecting the functions and diseases of the unimpregnated and gravid uterus, and difficult labours, which are evidently derived from extensive observation. He has described accurately the phenomena of menstruation, and traced the connexion which exists between the morbid states of this function, and hysteria, sterility, leucorrhœa, fibrous tumors of the uterus, and cancer. When the uterus is hard, and is low down near the pudenda, and the groins are indurated, and there is a sense of ardor, and sanguineous and fetid discharge, he says cancer may be suspected. The following passage proves that he was

well acquainted with the condition of the os uteri when affected with schirrhus, and that he was accustomed to examine the uterus by the vagina, in the same manner that we now do, to discover its organic diseases. "Si uteri in callum indurescant tum menses occultantur, tum corum os connivet, neque concepit et aliud quid esse videtur. Quod si attigeris, tanquam saxum illic esse videtur, os asperum est et multas habet radices, non leve aspectu, neque digitum admittit."—P. 658.

Some of the most important facts respecting the structure and functions of the human ovum had been ascertained at this early period, and particularly that the respiration and nutrition of the fœtus are effected by the placenta and umbilical cord. Hippocrates had an opportunity of examining a perfect ovum expelled about a month after conception, instead of six days, as he supposed, and it was probably the first entire ovum that he had ever seen, and I believe it was the first that ever was described. The feelings of admiration excited in his mind on first beholding it have, doubtless, since been experienced in an equal degree by the great anatomists "who have toiled in the mysterious researches of generation." "*Quam illa videns non sine admiratione spectavit, ego vere qualis referam. Ut si quis ovo crudo-externam testam undique auferat in quo interiore membrana contentus humor pelluceat, ad hunc fere modum (ut uno verbo dicam) se habebat liquor ille, prætereaque ruber erat et rotundus. Conspectiebantur autem fibrae albiæ et tenues in membrana cum sanie crassa et rubra contentæ, et ipsa membrana exteriore parte cruore ad instar sugillatorum suffusa erat. In cujus medio tenuæ quiddam extabat, quod mihi umbilicus esse videbatur et per illum primum respirasse, ex eoque protendebatur membrana tota genituram complectens.*"—P. 236.

In this concise description it is easy to recognize the decidua with its great plexus of veins gorged with maternal blood, the villi and cells of the chorion, the amnion, embryo, umbilical cord, and placenta, of which he has given a more minute account in the latter months of pregnancy, and of the functions it performs, and the membranes which surround it. The only parts of the human ovum to which there is no allusion here made, are the vesicula umbilicalis, which was first described by Albinus and Wrisberg about the middle of the last century, and the decidual cavity, discovered by Dr. William Hunter a few years after.

The works of Hippocrates likewise contain some important information respecting the diseases of pregnant women, particularly abortion, and the causes and symptoms of the death of the fœtus in utero. Blows, falls, violent terror, rupturing the membranes, diseases of the parents, are considered

by him to be the principal causes of the premature expulsion of the ovum. When the child is dead, he says, there is a sense of coldness in the abdomen, and it subsides, and the child falls like a stone within the uterus from side to side when the mother turns, and there is flaccidity of the breasts. If the menses appear during pregnancy, abortion follows, and the fœtus is expelled in a diseased condition. If much blood be discharged during labour without pain, there is danger that the child will be dead, or possess little vitality. Pregnant women affected with headache, sopor and weight of the head, he adds, are liable to be attacked with convulsions.

In difficult labours, where the head presented and could not be expelled by the natural efforts, it is probable that in the greater number of cases, after employing various remedies without effect, that he opened the head and extracted it with a hook or crotchet, as we do at the present time. If the fœtus lay across, presenting to the os uteri, whether it be alive or dead, he orders it to be pushed back and turned, so as that it may present with the head in the natural position; and to accomplish this purpose, the woman must be laid in bed with the nates raised higher than the head. If the child be alive, and presents with the arm or foot, he directs us to return them as soon as possible and bring down the head, or if it lies across, presenting with the side or hip, the same method, he says, must be used.

The operation here described is perfectly impracticable, and I cannot believe that he ever actually succeeded by it in accomplishing delivery where the arm presented, and the fœtus was mature, and the uterus contracting around it. Most of the women with preternatural presentations of the child would have died undelivered had some other method not been adopted, and that method consisted in mutilating the body with the crotchet, and bringing it away piecemeal, as we are sometimes still compelled to do where the operation of turning is inadvisable or impracticable. Hippocrates has compared the fœtus lying across the brim of the pelvis to an olive in a narrow-mouthed jar, which cannot be so easily extracted by the middle as when it presents with one end. But this comparison is both imperfect and incorrect, for the olive has neither head, nor superior nor inferior extremities, like the fœtus, and it is extraordinary that he failed, not merely to perceive these points of dissimilarity, but to discover that the feet of the child could readily be seized with the hand and extracted, while it was impossible for the hand to grasp the head on account of its bulk. The slightest reflection on what he must have often seen take place in presentations of the feet and nates, one might suppose would

have led to this discovery, which comprehends the whole principle of the operation of turning; a discovery which will ever be regarded as one of the most important in midwifery, and which has gained for its author the most lasting honour. That a circumstance of such vast importance, and now apparently so obvious, should not only have escaped the observation of Hippocrates, but of all who followed him for 2000 years, is truly a matter of the deepest astonishment, and seems to illustrate in a striking manner what Dr. William Hunter has said respecting the discovery of the circulation of the blood. "It is the more amazing that this discovery was left for Harvey, when we consider that he was near an hundred years after Vesalius, in which interval many great men had appeared, and anatomical schools had flourished in many different parts of Europe. And what is still more astonishing, Servetus first, and Columbus afterwards, both in the time of Vesalius, had clearly given the circulation of the blood through the lungs, which we may reckon at least three quarters of the discovery: and Cæsalpinus had, many years before Harvey, published in three different works all that was wanting in Servetus to make the circulation quite complete. But Providence meant to reserve this honour for Harvey, and would not let men see what was before them, nor understand what they read."

Midwifery remained nearly in the same condition in which it was left by Hippocrates till the middle of the 16th century, when lying-in wards were opened at Paris in the *Hôtel Dieu*, and opportunities were afforded of witnessing all the phenomena of natural and difficult labour, and the diseases of puerperal women. The great discovery to which I have now alluded was then made by Ambrose Paré, and described in the following passage in the 15th chapter of his translated works, 1665. "It is supposed to be a natural and easy birth when the infant cometh forth with his head forwards, presently following the flush of waters, and it is more difficult when the infant cometh forth with the feet forwards; all the other waies are most difficult; therefore midwives are to be admonished that as often as they perceive the child to be coming forth none of these waies, but either with his belly, his back forwards as it were doubled, or else with his hands and feet together, or with his head forwards and one of his hands stretched out, that they should turn it and draw it out by the feet; for the doing whereof, if they be not sufficient, let them crave the assistance and help of some expert chirurgian." The method the surgeon ought to adopt is described more particularly in Chap. XXVI. which is headed, "Of the Chirurgical Extractions of the Child from the Womb either Dead or Alive;" and it is obvious from the

following passage, that he had met with cases of arm presentation in which the feet could not be brought down and the turning accomplished till the arm was removed, and not then. "But if the infant lieth as if he would come with his hands forwards, or if his hands be forth already, so that it may seem he may be drawn forth easily that way, yet it must not be so done, for so his head would double backwards over his shoulders, to the great danger of his mother. Once I was called unto the birth of an infant whom the midwives assayed to draw out by the arm, so that the arm had been so long forth that it was gangrenate, whereby the child died. I told them presently that his arm must be put in again, and he must be turned otherwise. But when it could not be put back by reason of the great swelling thereof, and also of the mother's genitals, I determined to cut it off with an incision-knife, cutting the muscles as near as I could to the shoulder, yet drawing the flesh upwards, that when I had torn off the bone with a pair of cutting pincers it might come down again to cover the shivered end of the bone, lest otherwise, when it was thrust in again into the womb, it might hurt the mother: which being done, I turned him with his feet forwards, and drew him out as is before said. But if the tumor, either naturally, or by some accident, that is to say by putrefaction, which may perchance come, be so great that he cannot be turned according to the surgeon's intentions, nor be drawn out according as he lieth, the tumor must be diminished, and then he must be drawn out as aforesaid, and that must be done at once." Except some judicious observations on the treatment of retention of the placenta, there is nothing besides relating to midwifery of the slightest importance in the works of Ambrose Paré. Although he had enjoyed frequent opportunities of examining the gravid uterus in those who had died during pregnancy, and had repeatedly performed the Cæsarean operation on the living body, he never became acquainted with the ordinary position of the fœtus in utero, but considered it altogether uncertain and variable, both in living and dead women. This fact, indeed, was not known to many for a hundred years after this period, and the fœtus is consequently represented by figures in their works, in the most grotesque and unnatural attitudes, as if flying, jumping, walking erect, kneeling and swimming; in every position, indeed, except that in which it is placed by nature.

In 1609, about thirty-six years after Paré, his pupil, Guillemeau, published a work entitled, *De l'Heureux Accouchement des femmes ou il est traite du gouvernement de leur grossesse, De Leur Travail naturel et contre nature, Du traitement estant accouchees, et de leurs maladies.* He has

described the symptoms and treatment of natural labour with the greatest fidelity, and the management of new-born children and women in the puerperal state. He recommends a broad bandage to be applied around the body at the commencement of labour, and to be gradually tightened as it proceeds, and also a permanent binder, as is done at the present time, when the whole process is finished. Where the placenta did not immediately follow the child, he made pressure with the hand over the fundus uteri to excite the contractions, and employed all the means now in common use to promote its expulsion. The immediate extraction of the placenta after the birth of the child became, however, in no long time, almost the general practice, and continued to be so till about the middle, or near the end, of the eighteenth century, when Dr. W. Hunter made the unfortunate experiment of leaving it wholly to nature.

Respecting the diseases of pregnant and puerperal women, there is nothing of any great value in the work of Guillemeau: its importance is derived from the history it contains of difficult labours, which is far more accurate and complete than any that had ever before appeared, and in which he has embodied the results of all the observations he had made during a period exceeding forty years. "When a surgeon is called to a case of difficult labour, he should first inquire into the cause of the difficulty, and all the causes, he observes, may be referred to four heads—1, to the mother; 2, to the infant; 3, to those things that are connected with the infant; and 4, to external circumstances. Proceeding upon this principle of classification, similar in many respects to that adopted by Dr. Merriman in his excellent practical work on Difficult Parturition, he arranges all the varieties of laborious and difficult delivery, and describes their treatment under the following sixteen orders:—

1. Of the means of assisting women who have difficult labours.
2. Of the different labours which are accomplished by manual operation.
3. Of labours with hemorrhage and convulsions, and their treatment.
4. The means of affording relief when the afterbirth presents the first.
5. The delivery of dead children, and when they are swollen or distended within the uterus.
6. Cases of malposition of the head.
7. Presentation of the superior extremities.
8. Of the head and the two arms together.
9. Of the feet.
10. Of the feet and hands together.
11. Treatment of cases in which the infant comes double, or the back, loins, sides, shoulders, or nates present.
12. Presentations of the thorax and abdomen.
13. Cases of twins, one with the head presenting, the other the feet.
14. Twins, the feet of both presenting.
15. Retention of the placenta.
16. On the Cæsarean section, which he condemns after

seeing it unsuccessfully performed five times.

We have here not only all the great operations of midwifery then known minutely and accurately described, but we have the important pathological fact first clearly stated, that the placenta may present or come before the child; that this gives rise to a dangerous hæmorrhage, which nature is unable to suppress; and that the most safe and expedient means of arresting it is to deliver immediately by passing the hand into the uterus and bringing down the feet. He has made no observation from which it can be justly inferred that he believed the placenta to have been originally adherent to the upper part of the uterus, and to have descended from thence to the cervix. This is an erroneous hypothetical opinion which was first adopted by Daventer at a much later period, and which has been also attributed unjustly to Hippocrates, although he had formed no theory on the subject, having merely asserted that the placenta should come after the child, for the child cannot live if it comes first, because the child derives its life from the afterbirth, as a plant does from the earth. Portal was the first, in 1685, who stated that the placenta was found, not merely at the cervix uteri, but adhering to it all round. In the account of his sixty-ninth case he says, "*Je sentis l'arriere faix, qui se presentoit, et qui estoit fort adherant, et attaché à l'orifice de la matrice de toutes parts.*" In the histories of all the other cases the same circumstance is expressly stated, and the same treatment is recommended as that employed by Guillemeau, and which has continued to be the practice in common use to the present time.

In cases of hæmorrhage where the placenta did not present, but had been detached from the fundus uteri, Guillemeau likewise had recourse to artificial delivery; and for the knowledge of this practice he most candidly and honourably states that he was indebted to Ambrose Paré. His love of truth and of justice was such, that he would not claim an honour which belonged to another, though Paré had been dead for many years, and had made no mention of the discovery in his works.

Mauriceau and Smellie are the only individuals, who have devoted their lives to the study and practice of midwifery during the last two hundred and thirty years, whose contributions to the science, in point of originality and importance, can be compared with those of Guillemeau. Mauriceau practised midwifery forty years in Paris, and he considered no department of medicine or surgery superior to it in dignity and utility. For twenty-five years he preserved faithful histories of all the important cases which came under his care, and out of three thousand he selected seven hundred of the

most important for publication. "Among these cases," he observes, "will be found examples both to imitate and avoid; and since I have had the public good alone in view in relating them, I have recorded the unfortunate as well as the fortunate results of my practice, and have omitted nothing which long experience has taught me might in any way contribute to the health and relief of women in pregnancy and in child-bed, and to the cure of the diseases to which they are at all times exposed."

Mauriceau has recorded the histories of thirty-seven cases of uterine hæmorrhage, in which the placenta did not present, but had originally adhered to the upper part of the uterus, and been afterwards detached. Twenty-one of these cases occurred before 1682; and in most of them he delivered artificially by turning the child, as he had done in the sixteen cases of placental presentation which he has likewise recorded, and as Paré and Guillemeau were accustomed to do in all cases of flooding in the latter months of pregnancy. On the 9th June, 1682, he says, "I delivered a young woman in the eighth month of pregnancy, who had uterine hæmorrhage caused by a violent fall upon the knees four days before. During her whole labour she had only slight pains in the abdomen, which produced no effect. As the hæmorrhage was moderate, and the uterus was gradually dilating, I committed the labour to nature, contenting myself with rupturing the membranes of the child. There is no account given of the circumstances which led him to make this important change in the treatment of cases in which the placenta did not present, and to adopt that improved method of treatment which was, at a later period, so strongly recommended by Puzos, and considered by him as his own discovery. No fact of the slightest importance has since been discovered respecting the causes and treatment of uterine hæmorrhage in the latter months of pregnancy, and to Mauriceau the honour is due of having first pointed out the efficacy of rupturing the membranes where the placenta does not present.

The midwifery forceps, which enables us to save the lives of some children, which we would otherwise be compelled to sacrifice, was invented by Chamberlayne early in the seventeenth century, some years, probably, before the publication of Mauriceau's great systematic work in 1668. But no description was given of the instrument before 1733, and no precise rules laid down for its use. Chapman then stated that it could never be employed with advantage till the os uteri was dilated, and the head had descended into the pelvis. Smellie, soon after, having ascertained with greater precision the manner in which the foetal head passes through the pelvis, was enabled to lay down

still more precise rules for its application. Although Smellie's works contain many cautions against the abuse of the forceps, there nevertheless sprung up, soon after their publication, both in this country and on the continent of Europe, a singular want of confidence in the powers of nature, and a mischievous predilection for the employment of instruments in the practice of midwifery. The process of labour, instead of being regarded as a vital process, depending on nervous energy and muscular contraction, came to be considered as a function purely mechanical. "The whole art of midwifery," observes a learned professor, "is founded on geometrical principles; it is certain in all its operations, like the laws of motion, and might be reduced to the following simple problem in mechanics:—an extensible cavity of a certain capacity being given, to draw through it a flexible body of a given length and breadth, by an opening dilatable to a certain extent." "Parturition is a problem in mechanics," another exclaims: "a body is to be put in motion, a moving power is given, and there is a resistance to be overcome. Whenever the relation in which each of these three points of the problem stand to one another is in such a ratio that no movement or motion can be produced, the labour is at a stand." This application of mechanical principles to the practice of midwifery has been greatly promoted by the writings of Solayrès, Baudeloque, Gardien, Capuron, and many other continental, and some English and American, authors during the last forty years. The result of this has been, that in some public institutions there have been 300 forceps cases in 2,093 labours, or 1 in 7; and in others 1 in 14, 1 in 16, and 1 in 31 labours. From these facts it seems not very improbable that the time might actually arrive when no woman would be allowed to be delivered by the natural efforts; which another learned professor is said to have expressed a hope he would live to see. Dr. William Hunter had great confidence in the powers of nature, and inculcated in his lectures, with the happiest effect, the propriety of trusting much, in all cases, to their unassisted efforts, and of employing instruments only where absolutely necessary. He thus powerfully contributed to correct the evil I have now described, and which had prevailed also to a great extent in England. The writings of Drs. Osborn and Denman likewise assisted, and those of the latter contain by far the best account we yet possess, not only of the forceps, but of the operation of turning, craniotomy, and the induction of premature labour, which was first proposed by Dr. Macaulay in 1756.

During the present century many subjects relating to the structure, and functions, and diseases of the uterine system, at the different periods of life, which had remained for ages

involved in the greatest obscurity, have been successfully explored. Of these perhaps the most interesting are the researches which have been made into the structure of the human ovum before impregnation, and into the condition of the ovaria during menstruation and after conception; the circulation of blood in the human ovum during the early months; the pathology of the ovum at the different periods of pregnancy; and the causes of the death of the fœtus and its premature expulsion from the uterus. To these may be added the investigations which have been made into the structure of the various tumors of the uterus which are not of a malignant nature, and those which are cancerous. The nature of several puerperal diseases has likewise been determined by morbid anatomy during this period, and the diagnosis of pregnancy has been greatly improved by the employment of auscultation.

Perhaps I may be permitted on this occasion to allude to some labours on the nervous system of the uterus, which were commenced four years since, and which have now been brought to a successful termination. Dr. W. Hunter was the first who distinctly traced the great sympathetic and sacral nerves into the uterus, and suspected that the nerves enlarge during pregnancy. As he never examined the nerves of the unimpregnated uterus, and saw the nerves of the gravid uterus dissected only in one subject, he could not positively assert that they increased after conception. "I cannot," he observes, "take upon me to say what change happens to the system of uterine nerves from utero-gestation, but I suspect them to be enlarged in proportion as the vessels."

Mr. John Hunter denied that the nerves of the uterus ever enlarged during pregnancy in the smallest degree. "The uterus in the time of pregnancy," he says, "increases in substance and size probably fifty times beyond what it naturally is, and yet we find that the nerves of this part are not in the smallest degree increased. This shows that the brain and nerves have nothing to do with the actions of a part, while the vessels which are evident increase in proportion to the increased size: if the same had taken place with the nerves, we should have reasoned from analogy." Dr. W. Hunter left no dissected preparation of the nerves of the uterus, nor did Mr. John Hunter, to support their conflicting statements; and in 1838 there were no preparations of the nerves of the human unimpregnated or gravid uterus, nor of the uterus of any of the lower animals, in this country. In 1822, Tiedeman published a description of the nerves of the uterus, with two plates, in which only a few small branches of nerves from the great sympathetic were represented, accompanying the uterine arteries upon the sides of the lower part of the uterus. The fundus uteri,

which is possessed of the greatest degree of contractile power, is, you see, quite destitute of nerves. In 1823, Lobstein stated that the uterus both before and after conception is very sparingly supplied with nerves; and in 1829, Professor Osiander declared that the nerves of the human uterus had never been seen, either by himself or by any other anatomist, and that he could only assert, as Galen had done, from the irritability of the uterus, that it did possess nerves.

In the last volume of the Philosophical Transactions, there is a paper on the Nervous Ganglia of the Uterus, in which it is stated, from dissections of the unimpregnated uterus, and of the gravid uterus in the third, fourth, sixth, seventh, and ninth months of pregnancy, that there are many large ganglia formed on the uterine nerves, and on those of the vagina and bladder, which enlarge with the coats, blood-vessels, and absorbents of the uterus during pregnancy, and which return after parturition to their original condition before conception takes place. In the two engravings which accompanied the paper, are represented these ganglia and nerves of the uterus, vagina, and bladder, in the fourth month of pregnancy. But these constitute but a small portion of the nervous system of the human uterus; and the forthcoming volume of the Philosophical Transactions will contain a further account of the nervous structures of that organ, with the engraving I now shew you. In this plate have been accurately represented all the great blood-vessels and nerves of the gravid uterus, on the left side, at the end of the ninth month of pregnancy. About an inch above the origin of the mesenteric artery each cord of the great sympathetic nerve sends numerous branches which form a plexus around the trunk of the artery, which accompany the ramifications of the vessel, and particularly the hemorrhoidal artery, to the rectum. The two cords of the great sympathetic, after giving off these nerves, pass down before the aorta, about two inches below its bifurcation, where they separate, the left passing down behind the hypogastric blood-vessels to the side of the neck of the uterus, and terminating in what has been called the left utero-cervical or hypogastric ganglion. This you see is a very great ganglion, and covers a large part of the cervix uteri, and gives origin to the nerves of the vagina and bladder, and many of the rectum. All the blood-vessels of this ganglion have been injected, and an artery passes up from it, with a plexus of nerves, along the whole body of the uterus to the principal trunk of the spermatic vein, close to the ovary, and there terminates in another ganglion, nearly equal in size to the utero-cervical ganglion. From this spermatic ganglion the fundus uteri is supplied with nerves, and the sper-

matic nerves are sent off, and which pass up with the spermatic artery and vein to the renal plexus. Besides these ganglia, there are others of great size situated immediately beneath the peritoneum, between which and the spermatic and hypogastric ganglia numerous large plexuses of nerves, accompanied with arteries, pass. But what you see represented in this engraving is only the fourth part of the ganglia and nerves of the gravid uterus at the full period; and if it were asserted that these nervous structures bear to the uterus nearly the same proportion that the optic nerve and retina do to the eye, it is probable there would be little exaggeration of the truth. It is chiefly by the influence of these nerves that the uterus performs the varied functions of menstruation, conception, and parturition; and it is solely by their means that the whole fabric of the nervous system sympathizes with the different morbid affections of the uterus. If these nerves of the uterus could not be demonstrated to exist; if, as Mr. Hunter asserted, the nerves of the uterus were not enlarged in the smallest degree during pregnancy, and that the brain and nervous system had nothing to do with the actions of the uterus, its physiology and pathology would be completely inexplicable.

In all civilized countries midwifery is taught in the medical schools, and the propriety of employing physicians and surgeons in its practice is generally acknowledged. No apology, therefore, can now be required, in behalf of a branch of medical science so eminently conducive to the best interests of society, and a knowledge of which is essentially necessary not only to accoucheurs, but to all who are engaged in the practice of medicine and surgery.

In this course of lectures I shall endeavour to communicate to you a full account of all that is at present known respecting the structure, functions, and diseases of the uterine system, at the different periods of life, and prepare you for the discharge of those duties which will hereafter devolve upon you as practitioners of midwifery. It is a grievous error to suppose that a knowledge of midwifery is to be acquired more easily than a knowledge of any of the other branches of medicine. If you would excel in it, equal, perhaps greater, exertion will be necessary. Excellence, as Sir J. Reynolds has observed in his address to the students of the fine arts at the Royal Academy, is never granted to man but as the reward of labour. It argues, indeed, no small strength of mind to persevere in habits of industry without the pleasure of perceiving those advances; which, like the hands of a clock, whilst they make hourly approaches to their point, yet proceed so slowly as to escape observation. I need not, therefore, enforce the necessity of continual

application. You must have no dependence on your own genius. If you have great talents industry will improve them. If you have but moderate abilities, industry will supply their deficiency. Nothing is denied to well directed labour; nothing is to be obtained without it."

ON THE
USE OF DIFFERENT FORMS OF THE
SAME MEDICINE IN EQUIVA-
LENT DOSES.

To the Editor of the Medical Gazette.

SIR,

In a paper "On the dubious efficacy of Digitalis," which you did me the favour to publish in the *MEDICAL GAZETTE* for June 4, 1841, I quoted the opinion of Dr. Blackall upon the extreme difficulty of making "a just calculation of the relative strength of the infusion, the tincture, and the powder of digitalis."

This difficulty, noticed by Dr. Blackall in reference to digitalis, is experienced in calculating the relative strength of the various preparations of other drugs, but I believe it may be materially lessened by the use of medicines carefully prepared and exhibited under similar conditions in equivalent doses; or in such as contain equal quantities of active principle.

Inattention to the degree of concentration in which the active principles of drugs exist under various pharmaceutical forms, I believe often leads to error in proportioning their respective doses, as well as to an inaccurate estimation of their efficacy, and the chief object of this communication is to point out a few incongruities between the doses of several pharmaceutical preparations made according to the directions of the *London Pharmacopœia*.

It is not any part of my design to insist upon the necessity of giving large or small doses, nor to assert that different pharmaceutical preparations of the same drug can be made to correspond in chemical composition; for this correspondence must necessarily be prevented by the nature of the reagents applied to the drugs; but I believe the solvents used in making some of the officinal preparations named in the *London Pharmacopœia* are capable of dissolving all the active principle of the drugs to which they are applied, and

that the residue, which is insoluble in them, is inert. Upon this belief, I consider the strength of some liquid preparations may be compared with that of the solid drugs with which they were respectively made, and that their active principles may be administered in equivalent doses under the solid or liquid forms. But this rational mode of prescribing different preparations of the same drug is not invariably pursued; and the absolute quantity of active principle prescribed under similar conditions of disease, will be found to differ materially, without any evident reason for the difference existing referrible to the patient.

The incongruities to which I allude may be observed between the ordinary doses named in most posological tables and books on *materia medica*, and a few examples will suffice to render the above remarks intelligible.

Thus, one eminent authority states the ordinary dose of *cantharis*, in powder, to vary between gr. ss. and gr. ij.; and the dose of the tincture of *cantharis* between ℥x. and ℥xx. Now assuming that the *spiritus tenuior*, which is used in making the tincture of *cantharis*, is capable of extracting all the active principles of the fly, and that the maximum and minimum doses of the two preparations named above are respectively equivalent to one another, the larger to the larger, the smaller to the smaller—or that gr. ss. of the pulverised *cantharis* contains the same quantity of active principle as ℥x. of the tincture, and that grs. ij. contain as much as ℥xx.—then the practitioner, who, for the sake of argument, I will suppose, has produced certain effects on his patient with the powder administered in doses of gr. ss. will reasonably expect to produce similar effects with the tincture given in doses of ℥x. under similar conditions; but in this expectation he will be disappointed, and if he calculates the degree of concentration of the active principle in the official tincture from the quantity of materials directed to be employed in the *London Pharmacopœia*, he will perceive these doses do not contain equal quantities of active principle; for, fʒi. of the tincture, or ℥lxx., contain the soluble parts of $\frac{1}{4}$ of a grain of *cantharis*; and, consequently, ℥x. or $\frac{1}{4}$ of ℥lxx. contain $\frac{1}{4}$ of $\frac{1}{4}$, or $\frac{1}{16}$ of a grain of *cantharis*: hence, a dose of ℥x. of the

tincture is the equivalent of $\frac{1}{16}$ of a grain only, and not of gr. ss. of the powder.

The ordinary dose of gr. ss. of *cantharis*, on the same calculation, would be the equivalent of ℥xl. and gr. ij. of fʒij. $\frac{3}{4}$, or nearly ʒiij. of the tincture of *cantharis*, which is a dose considerably larger than that directed to be given in posological tables and works on *materia medica*.

I have prescribed the tincture to between 20 and 30 patients in St. Thomas's Hospital, some of whom took it in doses of ℥xxv., others in doses of ʒss. raised to ʒiij.

To three patients the pulverized fly was given in doses increased from gr. j. to grs. ijss.; and, to one person, from gr. j. to gr. ix., repeated thrice in 24 hours.

But I am unable to speak confidently of the relative strength of these preparations; and as it is not an object of this paper to advocate or deny the absolute efficacy of the medicines named in it, I may conclude these remarks on *cantharis*, by assuring the reader that the patients were questioned four or five times weekly relative to the effects of the medicine they were taking, and that in no case was any greater inconvenience experienced than a slight degree of ardor urinæ, and in a large majority of the cases no inconvenience whatever resulted from its use.

A very remarkable incongruity may be observed between the ordinary doses of the powder and tincture of *cubebæ*. The ordinary dose of the powder is stated in posological tables and works on *materia medica* to be ʒj.; that of the tincture fʒj.

But the equivalent of ʒj. of the powder is fʒj., or eight times as much as the ordinary dose of the tincture; and the equivalent of the ordinary dose of the tincture, or fʒj., is one-eighth of 60, or gr. viiss. of *cubebæ*, a quantity much less than that which is usually prescribed in one dose.

The ordinary dose of the dried squill-bulb given for the purpose of promoting expectoration is gr. j., and that of the *T. Acetum Scillæ* is fʒss.

But fʒss. of the liquid preparation contains the soluble parts of very nearly gr. iiiss. of the dried solid; and much more than is usually administered as an expectorant.

The acrid nature of squill is well known, and the practitioner who di-

rects the use of the *Acetum Scillæ* in doses of $\text{f}\text{ss.}$, repeated thrice or four times in 24 hours, with the view of affecting the pulmonary organs, will in all probability irritate the alimentary canal, and unnecessarily excite vomiting and purging.

The equivalent of the ordinary dose of gr. j. of the powder, under the form of the *Acetum Scillæ*, is only $\text{m}\text{viii}\text{ss.}$, and is much less than that usually prescribed for an adult.

It may, perhaps, be instructive to notice the ordinary doses of the officinal preparations of the *Hyoseyami Folia*, of which the extract and tincture are very frequently administered, and occasionally, also, the dried leaves themselves: the ordinary dose of the latter preparation is gr. v.; of the extract gr. v.; and of the tincture $\text{m}\text{xv.}$, or $\text{m}\text{xx.}$

Now on referring to the formula in the *Pharmacopœia Londinensis* for making the officinal tincture of *hyoseyamus*, $\text{f}\text{sj.}$ of it may be calculated to contain the soluble parts of gr. viiss. of the dried leaves; and gr. v. of the same leaves are the equivalents of $\text{m}\text{xl.}$, or twice the quantity of this tincture, which is usually administered as an ordinary dose. A concentration of the active principles of vegetable substances is effected by the process of making extracts; consequently, gr. v. of the extract of *hyoseyamus* should contain more active principle than gr. v. of the dried leaves.

The effects of gr. v. of the extract, so far as I have been able to observe them on hospital patients, are slight and equivocal; the effects of a smaller dose may be expected to be still less manifest; consequently, gr. iiss. of the dried leaves, in which inert compounds are associated with extractive and active principles, must be more than half as weak as gr. v. of the extract; but gr. iiss. of the dried leaves are the equivalents of $\text{m}\text{xx.}$ of the tincture, and are therefore probably less efficient than gr. iiss. of the extract.

Similar incongruities may be observed between the ordinary doses in which the preparations of the *Digitalis Folia* are often prescribed. There are authorities for prescribing the *pulvis digitalis* in doses of gr. ss.; the infusion of its leaves, in doses of $\text{f}\text{ss.}$; and their tincture, in doses of $\text{m}\text{x.}$ Now in

order to compare the relative strength of these preparations, the doses in which they are given should contain equal quantities of active principle: but if the degree of concentration in which the active principle of the leaves of *digitalis* exists in the tincture and infusion be calculated from their formulæ in the *Pharmacopœia Londinensis*, these doses will not be found arithmetical equivalents of one another.

Thus $\text{f}\text{sj.}$ of the officinal infusion of the *Pharmacopœia Londinensis* for 1836, contains the soluble parts of very nearly gr. iij. of the leaves; and $\text{f}\text{sj.}$ of the tincture contains the soluble parts of gr. vj. of the leaves; consequently, gr. ss. is the arithmetical equivalent of less than $\text{f}\text{ss.}$ of the infusion, or $\text{f}\text{sj}\frac{2}{3}$ exactly, instead of $\text{f}\text{siij.}$; and of $\text{m}\text{v.}$ of the tincture, instead of $\text{m}\text{x.}$

From this calculation the ordinary dose of the infusion is very nearly three times stronger than the ordinary dose of the powder; and probably, owing to this difference being overlooked, the infusion of *digitalis* enjoys the reputation of being the most active preparation of this plant; and the patient who swallows three times as much of its active principle in the liquid form as exists in its solid form, will be proportionably sooner affected by it.

Some recent observations of the effects produced by the powder and tincture of *digitalis*, made with leaves of the same quality, upon my patients in St. Thomas's Hospital, although limited in point of number, tend to show that these preparations, if given in equivalent quantities, will affect the system in nearly the same period.

The results of these observations, however, should only be considered as approximations to the truth, and as such are exhibited in the two following tabular forms; the first of which exhibits the results obtained with the tincture; the second with the powder of *digitalis*. The use of the medicine was, in every case, considered to be indicated by the symptoms; the doses were repeated in most cases every eight hours, and their effects noticed on three or four days in each week.

The cases were too few to require a distinction to be made between the sexes, and all the patients, excepting one female, were above 20 years of age.

FIRST TABLE.

Names.	Quantity of Tincture of Digitalis taken before any sensible effects were produced.	Time before effects were observed.	Doses.
1 Thornton	f. ʒviiss.	10 days	℥xv. t. d.
2 Gosley	ʒiij. $\frac{2}{3}$	5	℥xxx. t. d.
3 Croker	ʒiij. $\frac{1}{4}$	7	℥xv. t. d.
4 Hill	ʒvj. $\frac{1}{2}$	7	℥xv. t. d.
5 Townsend	ʒviij.	11	℥xv. to ℥xx. t. & 6tis.
6 Thurrorback	ʒv. $\frac{1}{2}$	9	℥xv. t. & 6tis.
7 Deane	ʒv. $\frac{1}{2}$	7	℥xv. t. d.
8 Griffiths	ʒix.	12	℥xv. t. d. & 6tis.
9 Runcorn	ʒiiss.	4	℥xv. t. d.
10 Hayward	ʒiiss.	4	℥xx. t. d. & 6tis.
11 Simms	ʒv. $\frac{2}{3}$	6	℥xx. t. d.
12 Cushion	ʒvj.	6	℥xv. t. d.
13 Donovan	ʒiv.	10	℥xv. t. d.
14 Cawnor	ʒvss.	7	℥xv. t. d.
15 Wallington	ʒiv.	5	℥xv. t. d.
16 Arden.	ʒij. $\frac{2}{3}$	7	℥xij. to ℥xv. t. d.

SECOND TABLE.

Names.	Quantity of the Pulvis Digitalis taken before any sensible effects were produced.	Time before effects were produced.	Doses.
1 Beaumont	gr. xijj.	6 days	gr. ss. to gr. iss. t. d.
2 Cockland	gr. xij.	6	gr. ss. to gr. j. t. d.
3 Crawley	gr. lv.	16	gr. ss. to gr. ij. t. d.
4 Harris	gr. lxxijj.	18	gr. ss. to gr. iiss. t. d.
5 Davis	gr. xxv.	12	gr. ss. to gr. iss. t. d.
6 Galloway	gr. xxijj.	10	gr. ss. to gr. j. t. d.
7 Emery	gr. xlij.	11	gr. ij. to gr. iij. t. d.

The total quantity of the tincture swallowed by sixteen patients, in 117 days, amounted to nearly fʒlxxij.; consequently the average quantity taken by each patient was fʒv. $\frac{1}{5}$; and the average time required to affect the system of each was $7\frac{1}{3}$ days.

From the numbers in the second table, it appears that the average quantity of pulverized digitalis swallowed by each of the seven patients was gr. xxxiv.; and the average time $11\frac{2}{7}$ days.

Now it is satisfactory to observe, with reference to the relative strength of these two preparations, that fʒv. $\frac{1}{5}$ of the tincture contain, very nearly, the soluble parts of gr. xxx. of the powder; a quantity which differs in a very trifling degree from the average quantity of the pulverized leaves. But whether this near approximation of the two numbers was the result of accident, and not of an equality of strength between the two preparations, remains

to be determined by more numerous observations. I am, however, inclined to believe it is not very far from the truth; and that these quantities of the two preparations might have been made to affect the system of the same patient in the same period of time, had the first doses in which the pulverized leaves were given been invariably equivalent to those of the tincture; but, for reasons which it is unnecessary to specify, they were always, excepting in one case, less than the first doses of the tincture, as appears in the third column of the two tables. Moreover, the dose of the tincture was repeated, in several cases, more frequently in the twenty-four hours than that of the powder.

A less proportional quantity, therefore, of the powdered leaves was swallowed by seven patients, than of the tincture by sixteen patients, in the same period; and to this difference

chiefly may be attributed, I think, the greater average time which was required to affect the system of the seven patients, as represented in the second table.

The idiosyncrasy of the patients, and the nature of their diseases, among other circumstances, may have tended to delay the manifestation of the effects of the medicine in some cases, and to expedite it in others; but these circumstances would have equally influenced the action of the tincture as well as that of the powder, and may be considered of no consequence in comparing the average results above noticed.

The preparations administered to the twenty-three patients were made with the mature leaves; but to five other patients a tincture of digitalis was administered which had been made of

the immature leaves, and its effects were carefully noticed.

It was administered in doses of $\text{f}\text{3ss}$. every eight hours, and, in two cases, augmented to $\text{f}\text{5j}$., continued, on an average, seven days, until each patient, on an average, had drank $\text{f}\text{3iiss}$. of the tincture, before any unequivocal signs of the system being under its influence could be observed. The average quantity deduced from these cases was much greater than that from the sixteen cases noticed in the first table; and the results tend to prove that the use of the tincture of digitalis, made with the immature leaves, in ordinary doses, will lead to inert practice.

The columns of the subjoined table exhibit, at one view, the discrepancies to which I have alluded above, as sources of the variable results obtained

Drugs.	Ordinary dose of powder.	Dose of Tincture.		Dose of Infusion.	
		Ordinary.	Equivalent.	Ordinary.	Equivalent.
Cantharis	gr. ss.	℥x.	℥xl.	fʒiv.	fʒj. ̄2
Cubeba	gr. lx.	fʒj.	fʒj.		
Digitalis	gr. ss.	℥x.	℥lv.		
Hyoscyamus	gr. v.	℥lxx.	℥xl.		
Acetum.					
Scilla	gr. j.	fʒss.	℥viiiiss.		

by the use of different preparations of the same drug in ordinary doses, and which, I believe, might be partly obviated by substituting equivalent doses.

Many other examples might be cited; but enough has been said to explain the object of this paper; and should you think my remarks possess

any general interest, you will oblige me by publishing them in your journal.

I am, sir,

Your obedient servant,

HENRY BURTON, M.D.

Physician of St. Thomas's Hospital.

41, Jermyn Street,
August 29th, 1842.

ON THE TREATMENT OF SYPHILIS BY TARTARIZED ANTIMONY.

By ALFRED SMEE, F.R.S.

Surgeon to the General Dispensary, Aldersgate Street; to the Bank of England, &c.

(For the Medical Gazette.)

Of all the diseases to which the human frame is liable, there is none wrapped in greater mystery, either in the cause of its production, the varieties it assumes, the rationale of its treatment, the duration of its effects, the injury it

inflicts, or the power which it possesses of being transmitted from generation to generation, than syphilis. It is by no means my present intention even to attempt to unravel these various mysteries, seeing how they have perplexed the brightest stars which have adorned our profession. Nevertheless, at the present time, I beg to be allowed to call the attention of all interested in the treatment of this horrible malady to a few prefatory remarks on a simple line of treatment, whereby its duration may frequently be rapidly cut short, and its injurious poison shaken from the system.

The employment of tartarized antimony for the cure of syphilis, in the peculiar way in which I now recommend it, occurred to my mind from noticing the effects of that potent remedy in removing various other diseases. The effect of tartarized antimony upon the system is rapid, and is very different when administered in different ways. If given in large doses it produces great effect upon the stomach, irritating that organ, exciting it to vomiting, and, from its action thereon, reacting upon the brain and nervous system. This mode of administration is very well where we desire to cause syncope for the purpose of reducing a dislocation, but this kind of action is precisely the one which we have to avoid when the remedy is given for the cure of syphilis. In this latter case, we give very small doses frequently repeated, so as to charge the system with the remedy, which then appears to irritate the capillary system and incite it to action: the whole excretory apparatus of the entire body being then irritated in the same way as the stomach in the former case, strives to throw off the new agent, and with it practically we have reason to believe that the syphilitic poison is ejected.

With regard to local applications best adapted for syphilitic patients, we should be careful always to employ such as can thoroughly decompose, and combine with, the puriform discharge; for if we consider that every part of the body, solids as well as fluids, is endowed with vitality, and all particles grow by like matters being attracted to like matters, it must be highly desirable to destroy the means by which such an increase might take place. If, however, we deny the hypothesis, it would be wise to act practically on the possibility, especially when universal experience shows that the surface of every sore cannot be too free from puriform secretions. In no case is this fact better seen than if we compare the rapid progress which syphilis usually makes in the lower orders, who, by paying no attention to cleanliness, let the pus accumulate, with the progress of the disease in those in better circumstances, who are exceedingly particular in this respect. Puriform discharges seem to be best removed by such substances which either have much affinity for, or are easily decomposed by, hydro-

gen. Nitric acid, nitrate of silver, oxide of mercury, chloride of soda, and a variety of similar applications, seem, in some degree, to act in this manner, and some of these have their action much improved by the addition of caustic alkali. Of these preparations the chloride of soda, except under particular circumstances, is much to be preferred, for whilst it seems most thoroughly to decompose and combine with the morbid secretions, it has apparently no influence on the vascular, or more vital part of the body, and therefore its application is almost unattended with pain. It is possible that there are discharges which might be destroyed by substances which have an affinity for oxygen, in which cases proto-sulphate of iron, certain vegetable preparations, as gum, sugar, &c. would be well adapted. Perhaps it is in these cases that certain balsams, as of Peru, cleanse a sore after every other local application has failed: but we must recollect that this hint, though worthy of consideration, is merely at present an hypothesis.

All local applications, however, cannot be comprised in those that act upon puriform discharge in that manner: there are some that seem to dissolve it, as chloride of zinc; there are others which arrest aqueous discharges, as acetate of lead; others which resist the action of the discharge on surrounding tissues, as lard, spermaceti, &c. Besides all these, there are others of stimulating or cooling nature, which, however, are seldom required for syphilis; unless indeed it be complicated with inflammation and its consequences, into the treatment of which it is not my present business to inquire.

I have already communicated all that is really worth knowing about this mode of treatment, yet varieties of the disease, either in degree or duration, differences of age and sex of the patients, their habits of life or idiosyncrasy, have yet to be considered; but perhaps all these circumstances will require years for their full development.

As a general rule, most patients labouring under syphilis, except, indeed, it be a sloughing phagedena, violet inflammation, or some such analogous case, no matter what form or duration, primary or secondary, provided the party be otherwise robust, or

at any rate, not in very ill health, will be benefited by the antimonial treatment. The medical man begins, if necessary, by ordering an aperient of colocynth, jalap, black draught, or similar purgative, and then directs the patient to take from 20 to 60 drops (30 medium) of antimonial wine, or the solution of antimony, every two or three hours regularly, and in every case where pus or a puriform discharge exists, use at the same time a lotion of chloride of soda, the strength of which should be regulated to the sensitiveness and delicacy of the part of the body affected.

This treatment I have seen to be efficacious in arresting the progress of the disease at the very commencement, when nothing appeared but four or five little red spots, which produce consequences, when left to their own course, that every surgeon well knows. In these cases the antimony should be used for three or four days, or even a week, till all redness and lividity are quite removed.

In simple sores, either of the prepuce or glans, the treatment is extremely efficacious, and here had better be conjoined with a solution of chloride of soda, containing about an ounce of the latter to a pint of water, which should be applied two or three times the first day. In many cases, in twenty-four hours the character of the sore becomes changed; the surface is no longer covered with white pus, a healing edge begins to show itself, and the sores, perhaps three, four, or more, are speedily healed. As soon as the character of the sore is changed, the part had better only be dabbed once or twice a day with the lotion, and at other times simply covered with a piece of dry lint; for we may be sure that here, as in all other cases, too much disturbance of a healing part only interferes with the natural healing process. Superficial sores will frequently, although of three weeks' or a month's standing, be healed in four or five days; but it is prudent to continue the antimony till not only the surface of the skin is not in the slightest degree raised, but even till the part affected assumes its natural colour.

The treatment of indurated sores is similar in all respects to that of superficial sores, and indeed that slight puffiness always to be seen round the

most superficial sore is perhaps to be considered as a slight induration, and the dense cartilaginous hardness which occasionally presents itself is nothing but the same thing differing in degree rather than in kind; and we have the authority of some most eminent surgeons, in confirmation of universal experience, that either produce indifferently secondary symptoms. The rapidity with which the cure is effected in these cases is proportionate to the degree of hardness. If the induration is moderate, the sore may heal, but the induration will remain; in which case the person is by no means to be considered as cured, for the antimony must be continued not only till the sore is cured but till the induration is removed. If the induration is very intense and hard, the sore, although healthy, will not heal till that is absorbed. In all these cases the antimony should be given very frequently at the commencement, and with the utmost regularity; for the remedy always produces the greatest effect on its first administration, and seems rather to lose its power after many days, for which reason it should be gradually increased in quantity.

Phagedenic sores generally occur in poor weakly constitutions, and require peculiar treatment on that account. The employment of antimony in these cases acts decidedly as a mild tonic; but still, as its excreting effects seem to exceed its tonic powers, we find it advisable in these cases to conjoin the use of the remedy with that of other more potent tonics. If, indeed, the skin is cold and clammy, we should use such remedies as experience has taught us determine the blood to the surface, for a few days previous to the employment of the antimony. A grain of sulphate of quinine may be given twice or thrice a day. A grain of proto-sulphate of iron, or a grain of sulphate of zinc, may be used with great advantage for the same purpose; and the antimonial drops exhibited as before. If the patient is but slightly feeble we may begin at once with the following mixture:—

R Zinci Sulphatis, gr. v.; Aquæ Dist. ʒss.; Vin. Ant. Pot. Tart., ʒss.; quaque ʒss. vel ʒj. pro. dose 2da vel tertia hora sumenda.

Proto-sulphate of iron may be substituted for the zinc with similar suc-

cess. If the patient is restless or sleepless, or the nervous system much affected, the addition of about twenty or thirty minims of syrup of poppies, or a few drops of laudanum to each dose, is of much service. A little Dover's powder may be given at bedtime. Whenever iron is employed it appears to be essential that the metal should be in the state of the protoxyd; for probably the persalts have but very little action on the system, and even that little action may be dependent upon a portion of the salt giving up one equivalent of oxygen. The nature of the salt of iron, provided it be a proto-salt, does not seem to influence the result.

In all cases where the patient is feeble, he should be desired, immediately he leaves his bed in the morning, to rub his entire body with a coarse towel till the skin is red, which will further help to promote a proper flow of blood to that important organ.

Buboes give way to antimony perhaps more rapidly than they do to mercury, and a more favourable prognosis may be given if this treatment be adopted. It would, however, be vain to attempt the removal of an inflamed bubo containing a large quantity of pus, by any general means.

Various eruptions of the skin, the sequelæ of syphilis, as a general rule, yield favourably and rapidly to antimony.

Ulcerations of the pharynx, uvula, and roof of the mouth, yield rapidly to this line of treatment. It is a good plan to use a gargle containing from ʒj. to an ʒj. of chloride sodæ to the pint of water, as that much facilitates the favourable termination of the disease. The ulceration, in these cases, rapidly loses its white layer of pus, frequently mistaken for lymph or sloughs; and as soon as a perfectly healthy surface is established the ulcer heals as rapidly as a common sore.

Ulcerations of the corners of the mouth and tongue, and a peculiar growth of the papillæ of that organ, yield rapidly to this line of treatment.

Syphilitic affections of the testicle, rhagides digitorum, &c. yield rapidly to this plan.

Of the value of antimony in syphilitic iritis and nodes I do not happen to have had any experience.

Such is a rough and brief sketch of

the cases in which antimony has produced such good results; and if we compare this remedy with mercury we shall perceive that it is entitled to the preference, in all cases in which it is applicable, and this for several reasons. In the first place, mercury takes two, three, four, or more, days before its general excretory effects manifest themselves; and previous to that time a marked and powerful stimulating effect is produced. The period of its excitement might be justly called the exciting period. This excitement, or stimulating property, increases from the commencement of the administration of the mercury till the period of salivation, just before which it is at its maximum. The exciting period is always shorter, but more violent, in direct proportion to the amount of mercury; and if very small doses be given the period is probably prolonged in length, but diminished in violence; and sometimes, in these cases, it is barely distinguishable. If two grains of calomel, and a third of a grain of opium, be given every six or eight hours, the effect is at its maximum on the second or third day, whilst its excretory and absorbent properties begin to manifest themselves on the third or fourth day. According to this view of the case, mercury given in large doses does harm to the patient on its first administration, gradually increasing the symptoms until it reaches the maximum excitement, when the same remedy alters its effects, and causes absorption and excretion. This fact is invariably seen, either in iritis, inflammation of the lungs, or peritonitis, when treated by this remedy; and hence arises the frequent necessity for bleeding before the administration of the remedy, and the frequent apparent, and even real, necessity for its repetition, either general or local, at the maximum excitement. In practice we should endeavour, as far as circumstances will permit, to cheat the remedy of this baneful effect by introducing it very gently and carefully into the system; and we find that nearly every case will yield to such a gradual administration of the remedy. In some degree the excitement is governed by the nature of the mercurial compounds, the oxides appearing to act more gently, and with less stimulation, than the chlorides, &c. Whether the remedy is taken in by the stomach, the skin, or

by fumigation, it does not seem much to matter; by the former mode, however, the effects of the remedy are far more easily controlled; for the absorption of the remedy by the latter is uncertain in amount. Sometimes the combination of small quantities of antimony with the mercury lessens the degree of excitement. The evidences of the exciting period being at hand are, additional pain, heat and redness in the inflamed part, but more especially by a large increase to the deposition of lymph, and a considerable additional impairment of the function of the organ. Moreover, the system is much disturbed, the patient is restless, sleepless, feverish, and generally in a most uncomfortable state. As the intensity of salivation and absorption are directly proportionate to the intensity of excitement and stimulation, it would be unwise, when we thoroughly understand the nature of this excitement, to lower the system by an abstraction of blood, if that can possibly be avoided.

If antimony be compared with mercury in the above properties, a vast difference is seen between them; for the first remedy appears to excite excretion within two or three hours of its first administration: the effects of mercury, however, gradually increase with the administration of the medicine, which appears to accumulate and remain in the system, whilst that of antimony seems, by long continuance, to lose in some degree its power, requiring an increase of the dose. If we look at the unpleasant effects of mercury, its salivation, destruction of the teeth, sloughing, erythema, &c. the contrast is also most striking; for I never saw antimony, in any case, produce poisonous symptoms, whilst every surgeon, even of but limited experience, must have seen frequent cases of death from the use of mercury, and sometimes even from very small doses.

The comparison between the action of tartarized antimony and iodide of potassium I feel hardly in a condition, at the present time, minutely to consider; but there are many unpleasant effects of this too-much-hackneyed medicine on the mucous, and perhaps even on the serous membranes, and, moreover, the remedy seems to remain in the system for a long period.

The treatment of syphilis by tartarized antimony, if compared with the

pil. panis systems of some modern surgeons, is most remarkable. I once had the opportunity of observing the latter practice upon a great variety of cases; and the duration of the disease appeared to be, as far as could be judged, more than treble, quadruple, or even a much higher multiple of the time required when moderate doses of mercury were administered. When, moreover, we consider that the antimonial, as a whole, may be considered more favourable than the mercurial treatment, the difference between bread (*i. e.* doing nothing) and antimony is remarkable.

The use of tartarized antimony is even more conspicuously shown in the middle than in the lower classes of society; for in the former cases the excreting apparatus is far more easily set in action, from which cause rather smaller doses may be administered: and it is a fact well worth recording, that antimony has a much greater tendency to cause vomiting or nausea in the morning than at any other period, for which reason the dose may be reduced to one-half at that period. The plan of treatment which appears to be most eminently successful is that by which a large quantity of the metallic salt is introduced into the system without any immediate effects by the means of its introduction.

The diet of the patient must be modified according to circumstances: a spare diet, as a general rule, is to be preferred, without spirituous liquors of any kind; but if the patient be feeble, nourishment or stimulus must be given, and there is no object in materially depressing the patient's strength in any case, though it would be advisable to keep him below what is termed rude health.

To ascertain the effect of antimony in entirely removing the syphilitic virus and preventing secondary symptoms, will necessarily be a work of time; but when we consider that antimony is a most potent remedy for removing the sequelæ of syphilis, how forcibly is the probability of a complete eradication of the disease presented to our minds. There are some creatures, indeed, who, unmindful of the lessons they learn, receive contagion upon contagion. In these cases we can easily conceive, that when a second or third disease is caught before the first is healed, and superimposed upon it, and the patient is

always incurring fresh risks, that some portion of the sum of all his distempers would lurk about him for ever.

The principle of the employment of tartarized antimony is probably the removal of the poison from the system, and whenever any offending matter has to be removed from the human body, the general plan of treatment for syphilis is admirably adapted. For all forms of serofula, where the matter may be regarded as a poison formed, thought not taken into the system, it is invaluable. In all forms of impetigo and encrusted sores of every kind, which are quite analogous to serofula, the rapidity with which such a treatment effects a cure is truly marvellous. Exaggerated cases of herpes yield with extraordinary rapidity, ten days or a fortnight being sometimes sufficient, in cases where the duration of former attacks had been two or three months, to effect such a complete restoration of the normal functions of the skin, as to leave no signs of a disease having existed. Sometimes a furuncular diathesis, where there is a great tendency to boils over the whole body, yields to such a line of treatment, when all other plans have failed. Even in cases of affections arising from the absorption of other metals, the treatment is of much value, for I lately had a case of paralysis agitans from the absorption of mercury which yielded steadily and rapidly to antimony and tonics.

In studying the effects of antimony upon syphilitic patients it has been complicated as little as possible with the exhibition of other medicines, yet in practice it would be folly for the surgeon to confine himself to any particular plan of treatment, but at all times, and in every case, to conjoin such remedies with the antimony as the surgeon may consider would alleviate the patient's pain, cut short the disease, or contribute to his safety. Experience, indeed, has hardly sufficiently warranted an assertion that mercury may be entirely abandoned in all cases, yet it is by no means improbable but that it may ultimately turn out that every case of syphilis may be successfully treated without it.

7, Finsbury Circus,
Sept. 15, 1842.

SURGICAL CASES.

To the Editor of the Medical Gazette.

SIR,

SHOULD you think the enclosed cases of sufficient interest, they are quite at your service.—I am, sir,

Your obedient servant,

GEORGE MAY.

Reading, Sept. 6, 1842.

Amputation at the shoulder joint.—The first case admitted into the Royal Berkshire Hospital after its opening, May 1839, was George Early, aged 15, with compound comminuted, or *open* fracture of the left humerus, close to the shoulder-joint. It had been crushed by a railroad waggon about two hours before admission.

Having recovered from the shock, immediate amputation was performed. The soft parts were much injured, and the bone fractured so high, that it was deemed needful to disarticulate. This was ably performed by the late Mr. Samuel Young, the senior provincial surgeon of the hospital.

The best flap was made which the circumstances permitted, the case progressed favourably, and he was discharged well, about nine weeks after admission.

I hope to be pardoned in obtruding here a brief tribute of respect to our lamented colleague. With mild and unobtrusive manners, with untiring devotion to his professional duties, and undeviating rectitude of conduct, he secured the friendship and esteem of his contemporaries, and enjoyed a large share of public confidence and support.

Fracture of the neck of the scapula from muscular action.—Miss M., aged 16 years, May 1823, while throwing a necklace on her neck at the toilet, screamed with pain in her right shoulder, and her arm fell disabled. The shoulder was flatter, and the head of the os humeri felt more inwards, than its fellow, the coracoid process being on a lower plane; a distinct crepitus was felt; the acromion, humerus, and clavicle, were entire. Elevation of the arm removed the deformity, which was reproduced on withdrawing the support. A pad was placed in the axilla, and the arm raised and kept to the side; passive motion was commenced at the end of six weeks, and she recovered its perfect use.

The learned author of the article *Fracture*, in the *Cyclopædia of Surgery*, doubts the existence of fracture of the neck of the scapula, but if this was not a case, I cannot understand what it was. It was not dislocation, as proved by the restoration of the shape of the parts on raising the arm, and the return of the symptoms on withdrawing the support. The humerus, acromion, and clavicle, were not injured, and the crepitus was very distinct when the coracoid process was pressed upwards and backwards by the thumb, the fingers being placed below the spine.

I presume there must have been fragility in this case, and that the fracture was produced by the sudden jerking action of the biceps and coraco-brachialis, during a frolicsome swing of the necklace. The comparatively slight deformity might have arisen from the integrity of the ligament described by Sir Astley Cooper, and the perfect recovery would warrant the presumption of union by bone.

Fracture of the head of the humerus.—David Beedle, aged 15, shoemaker, fell from a ladder, May 1820, striking his left shoulder against the edge of an area step; a portion of the humerus at its outer side was fractured, and was readily detected. It did not unite.

Aug. 1842.—The general appearance of the arm is similar to its fellow, but the head of the bone is felt to be flatter: he is occasionally inconvenienced by the broken and loose portion, but it does not materially interfere with his occupations.

Dislocation of the humerus into the axilla (the dislocation downwards of Sir A. Cooper; subpectoral, Velpeau; sub-coracoid, Malgaigne).—J. Nash, aged 49, farm labourer, came into the Royal Berkshire Hospital, March 14, 1842, having fallen from a waggon against a bank, and into a ditch of water, and dislocated his left humerus into the axilla. Being very wet and cold, he was put into a warm bath, and soon after laid on his back, and traction made by the wrist directly upwards, and in the axis of the body. The reduction was easy and immediate. If the chief obstacle to the reduction of this dislocation be the supra-spinatus muscle as stated by Sir Astley Cooper, the mode introduced by White, revived by Malgaigne, and sanctioned by Velpeau, would seem to be the most appro-

priate, by securing its complete relaxation.

Atrophy of the right deltoid muscle from injury of the circumflex nerve.—W. Emma W., aged 20, when three months old, fell from the arms of her nurse, but before reaching the ground was caught and suspended by the arm, which was disabled: she suffered considerable pain, and did not regain its free use. At the present time, Sept. 1842, the shoulder is small and flat, the head of the humerus felt as if covered only by integuments; all the other muscles are well developed, nor is there other appreciable injury: the entire arm is less than its fellow; she is unequal to over-handed exertion, and cannot bear a prolonged use of her needle, unless the elbow be supported. I think it a reasonable presumption that the circumflex nerve was injured, and that atrophy of the deltoid is the result*.

Fracture of the coronoid process of the ulna.—Blay, aged 9 years, August 1834, stumbled over a heap of stones, while running, and fell on the right hand, which was extended to save himself. The elbow-joint had the appearance of dislocation backwards; its natural shape and position were restored by flexion, but the distortion returned when the arm was extended; the humerus was broken; crepitus could not be felt.

Treatment.—The fore-arm was kept in extreme flexion, and slung around the neck; passive motion commenced at the end of five weeks, and the recovery was perfect. I think the presumption is in favour of ossific union; if by ligament, it must be very short, as it does not entail the slightest inconvenience.

Sub-luxation of the head of the radius from disease.—Ann Clarke, Reading, aged 44. Her right arm was natural at birth; when twelve months old she had small-pox, followed by abscesses in the fore-arm and elbow-joint. Present state: the head of the radius is sub-luxated backwards, and is very prominent; the arm is shorter than its fellow; the forearm semi-flexed; the hand habitually prone; supination and extension are incomplete. In this case it is probable that ulceration of the ligaments existed, and the arm being kept too long in pronation, the radius

* See observations by M. Blandin, *Continental and British Medical Review*, vol. 1.

was dislocated by the action of the biceps.

Congenital luxation of the radius backwards in both arms.—Ann Bathe, aged 16, of delicate strumous habit, has a dislocation of the radius backwards in each arm. Her mother noticed the deformity within a few days of birth, and reports her labour to have been natural, quick, and without interference. Present condition: both arms are habitually in semi-pronation and semi-flexion; they admit of complete flexion, but extension is incomplete, and supination very imperfect; the forearms are full sized, and developed proportionally to the rest of the body; the carpal joints are perfect; the head of the radius is very prominent in each arm: in the right, the superior extremity has its natural hollow, and is placed behind the outer condyle of the humerus, and reaches within half an inch of the summit of the olecranon; in the left it is rounded, and without hollow, larger, and ascends nearer to the point of the olecranon; both admit of rotation only. Each radius is obviously longer than natural, but whether its capitulum be defective or not, cannot be ascertained. The history of the cases recorded by Dupuytren and Cruveilhier being defective, their nature was a subject of speculation; the former contended for their congenital origin, the latter in favour of their being unreduced dislocations, but not congenital. The present case is positive and indubitable, having been recognised by the mother, the nurse, and others, within a few days of birth.

In Mr. Bransby Cooper's edition, Sir A. Cooper has recorded a case of accidental dislocation of the radius backwards, which occurred under my observation, with the particulars of which I furnished him at the time.

RETENTION OF URINE FROM AN HYDATID CYST.

To the Editor of the Medical Gazette.

SIR,

As I think the accompanying case is of rare occurrence, I shall feel obliged by your giving it insertion in your journal.

Yours obediently,

REGINALD JAMES,
House Surgeon.

Westminster Hospital,
Sept. 28, 1842.

On the 17th of July, Thomas Crane, ætat. 59, was admitted under the care of Mr. White, with retention of urine, not having passed any in a stream for thirty-six hours. The bladder appeared greatly distended, reaching quite as high as the navel. Skin hot and dry. Pulse 108. Was immediately placed in a warm bath, and a catheter passed. Some urine flowed, although the catheter was not in the bladder; but it went quite to the neck. Ordered

℞. Castor Oil, and ʒss. of Laudanum.

Hot fomentations to the hypogastrium.

July 18th.—Bowels had been freely moved. Catheter passed just as before, but not so much urine escaped.

Liq. Opii Sed. ℥xxv.; Aq. Pimentæ, ʒj. stat.

19th.—The bladder greatly distended. No urine escaped on passing the catheter. In great pain, and quite delirious. Ordered,

Tr. Opii, ʒj. Mucilag. Amyli, ʒij. as an enema, and Liq. Opii Sed. ℥xxv. by the mouth.

In the evening was greatly relieved by the opium, and perfectly tranquil, but no urine had passed.

20th.—Although a little urine had dribbled away, the swelling was not diminished.

V. S. ad ʒxij. and repeat the anodyne.

21st.—Not having passed any urine, and suffering severe pain, Mr. White determined to cut into the bladder. The patient was placed as in the operation of lithotomy; the incision made as in the lateral operation; but some difficulty was experienced in cutting into the bladder, from its altered position. When the bladder was divided about a pint of urine escaped; but the distension above the pubes was not diminished, nor was the pain at all lessened. After he was removed to bed, a little urine dribbled away. In the evening he became comatose, and died on the following day.

Post-mortem.—Externally, the abdomen presented much the appearance of a woman far advanced in pregnancy. On opening the cavity of the abdomen, the bladder was found greatly distended, and above it a tumor, having the appearance of a second bladder. It was firmly attached to the upper part of the bladder, and less so to the omentum. On dissecting out the tumor, it was found to be a sac, containing at least three

pints, filled with hydatids; some the size of marbles, others as large as pullets' eggs. This had so pressed the bladder against the pubes, as to divide it into two portions; one above the pubes, and rather overlaying it, and the other below: so that, when the bladder was punctured, only that urine escaped which was in the lower part of it. The portion of bladder above the pubes contained more than two pints. The obstruction to the catheter must have been caused by the displacement of the bladder, as there was no stricture in the urethra. The bladder was healthy, excepting a small spot of ulceration on the posterior part. The prostate gland was but little enlarged.

MEDICAL GAZETTE.

Friday, October 7, 1842.

"Licet omnibus, licet etiam mihi, dignitatem Artis Medice tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

ON MEDICAL EDUCATION.

THE improvements in the system of education which have been effected within the last few years are not more apparent in any science than in that of medicine, both with regard to the period which is allotted to it, and the course which is pursued in it. Not only are the facilities of obtaining information increased in a very great degree, but the method of employing them has undergone a remarkable change for the better. With the improved opportunities to advance themselves in the science of medicine, there has been infused into our students a stronger desire to profit by them, and a greater zeal in the pursuit of knowledge. The facilities to study, and the desire to obtain information, which are by no means necessarily concomitant circumstances, and, in fact, often hold an inverse ratio to one another, have, in this instance, gone on advancing, as it were, *pari passu*. It would be absurd to pretend that this influence is uni-

versal in its operation, or to say that all partake equally of the desire to advance themselves. We need not look far to learn that all who enter the field of medicine are not hard labourers, that all are not equally anxious to cultivate the soil to its fullest advantage, and to discover the hidden treasure which lies beneath it. But we do say that no one who is acquainted with them as a body will deny that the medical students are a greatly improved and an improving class.

The higher rate of knowledge with which the generality of practitioners now commence the duties of their profession, in comparison with that of their predecessors, is alone sufficient evidence of this. In thus speaking, we throw no disgrace upon the seniors of the profession—we desire to institute no invidious comparisons. In stating that the average amount of knowledge with which they left the schools and entered upon their practice was inferior to that possessed by the graduate of the present day, we cast no reflection upon the industry of the one party, and show no superiority of merit in the other. The difference between them is not to be referred to any distinguishing feature in either, but simply to the period in which each lived, and the advantages which each enjoyed—to the greater facilities of information which the student of the present age possesses, and the improved system under which he has the good fortune to come, in comparison with that under which the student of thirty years ago was placed.

This improvement cannot be traced to any one cause, but is owing to a combination of circumstances, and has been slow and gradual in its progress. Among other things, it may be, in part, attributed to that march of intellect, or general advance of science and education, which has characterized the late period of peace and prosperity in

our country, and has extended its influence to medicine as well as to every other branch of science. It may also be in part attributed to a spirit of emulation arising between the teachers as well as between the students in the different schools, which now exist in such numbers that the supporters of each are obliged to labour hard to maintain its reputation. Thus has sprung up a rivalry between the various provincial and metropolitan schools which has tended to the improvement of them all. Emulation among students has, in various ways, been encouraged and turned to good purpose, especially by the distributions of prizes and honorary distinctions, which take place in almost every school, as well as by the various offices and appointments which are bestowed according to merit.

It would be an injustice to the regulating and examining boards of the profession to omit to mention the assistance which their endeavours have contributed in promoting this advance in the proficiency of students. By the judicious alterations in the course of education which they have introduced, especially with regard to the apprenticeship system—by curtailing that period of which so large a portion was wasted on the manual drudgery of the profession, and permitting a more extended routine of study in London, or some large provincial town—they have done great service to the profession. By requiring certificates of the attendance on certain courses of lectures, and of a given routine of dissection and hospital practice, they have enforced the opportunity of a wider and more regular course of study. They have regulated the employment of that period in a methodic manner (we will not say in the *most* advantageous manner); and by their stricter examinations, they have required from the candidates for their diploma a higher rate of knowledge.

These and a variety of other circumstances, which it is needless to mention here (for we do not pretend, neither would it be an easy task, to enumerate them all), have conspired to render the rising practitioners of the present day a better informed class of persons, and more fit to undertake the important duties of their profession, than could be the case in days of yore, when the student had neither time nor opportunity given him to acquire more than the rudiments of medicine, and was hurried into practice to gather up, as he went along, the information which his own observation might furnish him. And it is not simply in a scientific, but in a moral point of view also, that we flatter ourselves improvement has been effected. The medical student no longer merits that character which it has been his lot to possess in comparatively recent times, and which was attached to him by a modern writer with no sparing hand. An evil reputation once stamped is long in wearing out, although the cause which impressed it may have ceased to exist, and the bearer become undeserving of it: and so it has been with medical students; they still endure, to a greater or less degree, the opinions which were formed of their predecessors, and which are probably no more applicable to them than to any others.

There is, moreover, another thing which is of comparatively recent existence in medicine, but which is daily gaining ground in the large metropolitan schools, and has already done something to assist in improving the cast of medical students, at the same time that it bids fair to effect much more—we refer to the system of private tuition. We are aware that some objections are urged against it on the ground of its increasing the expense of medical education, and giving to those who can afford to avail themselves of it an unfair advantage over their poorer brethren, in competitions

for honours and appointments which are made the reward of merit. Even granting that these objections are valid, and some others of less moment which are brought against it, we still maintain that the general good effect of such a system, if brought fairly into operation, would be very great, and it would tend, in various ways, farther to improve the character of students, and, by its influence on them, to advance the science of medicine.

Let us look at the Universities of Oxford and Cambridge, where a plan of this sort has been long and extensively carried out, and has even, in a great degree, supplanted the professorial mode of teaching in classes. It is a well-known fact that almost all who are desirous of taking even a respectable station, much more those who are ambitious of obtaining a high rank in the examinations, have recourse to a private tutor, whose advice and close superintendence they well know is more likely to ensure their success than the regular and more formal instruction of the college lecturer or the public professor. Very few indeed carry off the high honours in the university without having recourse to such assistance in their studies. Here, then, the tutorial system, as it has been called, has received a full and fair trial, and no other proof of its efficiency need be given than the extensive manner in which it has been here adopted.

It may perhaps be said that private tuition is less important in the study of medicine, where the books are easy, and observation and experiment are the principal guides, than in the study of the dead languages, or in the abstruse processes of mathematical reasoning: and we grant, to a certain extent, the truth of the assertion. But, though it may be less in degree, its effect is nevertheless good. The opportunities of supervision and direction afforded by it are such as can be ensured in no

other way, and such as are truly wanted by the generality of students, who, coming up to the schools, are plunged in the whirlpool of lectures, dissecting and hospital practice, scarce knowing which way to turn, or where to begin. They have no one to direct their studies, and are ignorant what subjects to commence, what books to buy, or what order to follow. They enter upon their studies, perhaps, with ardour and good determination; but their endeavours fail, like the aim of the unskilful marksman, for want of proper direction; they become disgusted with the little progress they make, throw aside their books, and betake themselves to other, not usually more profitable, amusements; such, at least, is too often the case. They are still less under any moral discipline, and, turned loose into the world, are too apt to fall an easy prey to the temptations around them.

A careful system of private tuition would, no doubt, prove a powerful remedy to many of these evils: the employment of the pupil's time would be superintended, his studies directed, and a gentler or less influence exerted over his moral life. Such a system would probably in time give a most effectual check to the obnoxious process of mere *grinding*, and would form of itself a far more profitable substitute; at least it certainly appears to us that it would be more likely to benefit the student than the ordeal of cramming, which, *volens volens*, a vast number deem it their imperative duty to undergo.

We throw out these hints just now on this subject, thinking they may be of service to some who are about to enter upon their medical education in London or elsewhere, with the commencement of the session, and who are in doubt as to what course they had better adopt to turn their time to the most profitable account. We would recommend them to give the subject a careful consideration and should they

adopt some such course as we have advised, they will not, we think, have any reason to regret the step they have taken—if, at least, we may judge from the opinions of those who can bear witness to the practical effect which it has had on themselves, of whom we never heard any speak but in terms of the highest satisfaction, of the advantages which they derived from it.

INSPECTORS OF ANATOMY.

WE announced last week the appointment of Mr. Alcock and Mr. Bacot, as Inspectors for England: we have now to add, that Dr. Andrew Wood, of Edinburgh, has been appointed Inspector for Scotland.

INTRODUCTORY LECTURE,

Delivered at University College,

Oct. 1, 1842,

By C. J. B. WILLIAMS, M.D. F.R.S.

Professor of the Principles and Practice of Medicine, and of Clinical Medicine, &c.

State of practical medicine, as a study, and as an art—Insufficiency of empirical and nosological medicine—General pathology the true foundation for practical medicine.—What is general pathology?—Its relations to clinical medicine—Noble nature and objects of medicine.

I HAVE been requested by my colleagues to open the business of the session; and in doing so I shall adhere to our usual practice, by making the subjects of this address also introductory to those of my own course.

It is three years since I gave my first introductory lecture in this place; and when I recollect the trembling anxiety which I then felt at the prospect of the difficult and responsible duties which devolved on me, my heart fills with gratitude to a Gracious Providence who has granted me health and strength of body and mind to perform these duties, however imperfectly; and I cannot forget the kindness of my pupils in overlooking the faults and deficiencies of my first attempts.

Now, at the commencement of a fourth session, I hope I need not say that my sense of the importance and responsibility of my office is in no degree diminished. Nay, it is much increased. The longer a medical man practises his profession, the more he sees the value of a right knowledge of it; and, if his conscience be not seared, the more anxious will he, who teaches, be to communicate that right knowledge to his pupils. Further, time and experience ought to improve the resources and strengthen the faculties of the teacher, and give greater weight to his opinions: in like proportion also should he feel responsible for the in-

creased influence which he may exercise over the minds of his hearers.

I must further state another circumstance which greatly upholds my anxiety to bestow my best exertions in teaching the subjects of my course. It is *the low position which this most important part of medical science still holds with the public, and even with students.* I feel this to be a matter of such moment, that I propose to make the chief subject of this lecture, the state of practical medicine, as a study, and as an art.

Compare the state of the practice of medicine with that of anatomy, physiology, and chemistry—the great fundamental or preparatory studies. How minute, how precise, how connected and definite are these! Yet how loose, indefinite, uncertain, unconnected, is the practice of our art. To the public it appears altogether vague—without any acknowledged principles.

Is there any wonder, then, that quackery should triumph; that the public show their want of faith in legitimate medicine by their ready belief in any novelty that is not legitimate? Thus, one year, St. John Long's plan; another year, homœopathy; another, Morison's pills; another, the water-cure—rules the fashion. The public may show their ignorance by such credulity; but they show also the want of something plain and trustworthy in regular medicine. The public will not believe that the secret of the art is with a faculty which professes to follow experience only. The quack also can appeal to his experience; and that, too, in a way more striking and convincing than those who express doubts and admit difficulties. Thus one who cures nervous diseases can calculate his success by the numerical method. In 8000 cases he can count only 20 failures. Another tells you of an extraordinary percentage of success in cases of deafness, in which the *most eminent practitioners had failed*, &c. Hence you will find the partisans of quackery far more zealous in the defence of their favourite notions than others are in support of the regular art. No wonder that homœopathy and the water-cure have their royal and noble advocates. Then there is a captivating simplicity in the theories of quacks. A certain high official personage pins his faith to an empiric who was formerly a gardener, and whose notion is that all diseases proceed from buttercups. This is the theory: every man, woman, and child, eats mutton, beef, or butter, or drinks milk: every cow and sheep eats buttercups with its grass: buttercups are rank and acrid weeds: *ergo*, all diseases proceed from buttercups. How beautifully simple! How attractive, too, are the comprehensive views of the hygeist and the water curers! they both agree in their pathology; all diseases arise from bad matter in the blood; they only differ in their mode of expelling it from

the system. One purges out the peccant humour; the other washes and sweats it forth. There is something, too, very fascinating in the notions of homœopathy: *similia similibus medentur*. Who cannot fail to admire the expansive genius of Hahnemann, who discovered that the best cure for a disease is the influence which caused it?

On the other hand, the regular practitioner has nothing so plausible or so captivating to bring forward in explanation of *his* method. He either has no theory at all, and grounds his practice on experience (in which we have said he is matched by the empiric), or, if he gives a theory, it is viewed only as an opinion no better than the hypothesis of the quack, in an art so little founded on principles as medicine. So little favour does medicine receive from the public in its pretensions to science!

How is it with the student? Surely the practice of physic must be as interesting as it is important to the student—the useful application of all his knowledge—the wind-up of the drama of his studies—the rehearsal of the great performance of his life. Surely this must be a very attractive study? Quite the contrary. I believe it has been generally considered by students as the heaviest, most repulsive, most tedious of all subjects (with, perhaps, a single exception). Without the constant appeal to the senses with which *anatomy* attracts and rivets attention; without the beautiful connections and adaptation of means to ends which make *physiology* interesting; without the simplicity and striking phenomena which give a charm to *chemistry*, the practice of medicine, as taught, is an enormous mass of dry detail; its science, mere glimpses into an unknown land; its rules, irregular tracks through a wilderness of confusion. Practical medicine is studied only from a conviction that it is useful and necessary; and not because it is easy or agreeable.

Further, there are a great many students, certainly not the most industrious, who shirk the disagreeable duty, pleading that it is neither useful nor necessary; and that the practice of medicine is only to be learnt at the bedside with whatever aid books can supply. It would speak more in favour of this opinion, if its advocates acted up to their dogma, and proved, by their constant and diligent attendance in the wards of the hospital, that they seek there the knowledge which they profess to be unable to obtain in the lecture-room. But, so far as my observation has gone, I do not find this to be the case. It is not those that neglect the lectures, but those who most regularly attend them, that prove to be attentive students in the hospital.

But, although useful and necessary, it cannot be denied that the study of the practice of medicine, both by books and by

lectures, is at first very difficult and irksome: more so than other studies. But why is it so? This is a serious matter. Let us examine a little into it. Is the fault in the imperfect state of the subject, or in the method by which it is taught? The science of practical medicine is undoubtedly very imperfect; but I think it can be shown that there is a still greater imperfection in the method by which it is taught.

As anatomy and physiology, with chemistry, are the studies preparatory to medicine, one might expect that they should be made fundamental to that of medicine; that, starting from the knowledge of the healthy body, as taught by them, the transition should be easy and intelligible to disease—first, in its lowest degrees and simplest form; then to the more compound, pronounced, and more removed from, but still comparable with, the healthy standard. Instead of this, lecturers and writers plunge at once into the mazy thickets of inflammation and fever—subjects so complicated, so changed from any thing taught by previous study, that anatomy and physiology afford little help: and no wonder that the student (like many observers and reasoners on the same topics) becomes confused and bewildered in the complexity of the subject; or, if he do make out any thing, it is something isolated, abstract, about fever or inflammation itself, without its natural relations to health and to other diseases.

This plan of proceeding may be compared to a person beginning the study of mechanics with the steam engine; or to the student of chemistry commencing with organic matter.

The general result is, that, where any distinct notion of disease is acquired, it is one not at all founded on previous physiological knowledge; but it is a new idea of disease as an absolute, separate thing, not a mere condition consisting of altered function and structure, but a being, the character and history of which are to be detailed like that of a plant or an animal. And when special diseases are treated of, the same individualizing process is pursued through all the jargon of the schools. Each has its nosology, classification, and definition, its predisposing, exciting, and proximate causes, its theory, *ratio symptomatum*, its diagnosis, prognosis, indications of cure, fulfilment of these, *juvantia et ludentia*, and prophylaxis!

With all this formidable array to each disease, the practice of physic was an arduous study in the days of Cullen. What must it be now, when the diseases of Cullen's nosology have been almost doubled, and the facts relating to them have been more than doubled?

But let us follow the student, well crammed with his nosological list, their definitions, &c. to the bedside. Let us see how his knowledge, so meritoriously and

laboriously obtained, will serve him in the hour of need. In a few cases of fully developed and well-marked acute diseases, such as pleurisy, scarlet fever, or rheumatism, he may get on pretty well; but in the commoner description of cases, acute or chronic, in their early stages, in their endless variations from peculiarities of constitution, or from complicating causes, he finds himself continually puzzled: the phenomena do not correspond with any of his defined diseases: they frequently change their character in a way that he cannot account for; his prognosis is falsified; his diagnosis fails; and his treatment, although not always unsuccessful, does not answer according to his expectations; some patients recovering whom he expected to die; others dying, or not improving, whom he expected to recover.

Disappointed, in the failure of his nosological learning, the young practitioner more and more mistrusts it, and falls into a routine of empirical practice. Without troubling his head about the name or nature of diseases, he thinks solely of their treatment; and, begrudging the time that he has spent with books and lectures, he decries every thing that is not practical.

Still he is obliged to retain some notions of the theory of disease; but they are general notions, and not fettered by definitions. He still studies symptoms: he seeks in the pulse and heat of skin indications of fever and inflammation; he looks to the tongue and alvine evacuations for proofs of disorder of the digestive organs; he judges, by the complexion and muscular strength, the state of the constitution. Instead of troublesome scholastic definitions, he uses convenient, general terms, which may be taken in a pretty vague sense—such as irritation, congestion, constitutional weakness, cachexia, disordered digestive organs, scrofula, scorbutic habit, and the like; and his remedial measures are designated in the same convenient general terms—such as soothing, cooling, supporting, stimulating, alterative, purifying, &c.

In short, he has, in practice, learnt himself, in a loose way, at the expense of previous studies, and sometimes, it is to be feared, at the expense of some bad practice, what he ought to have been properly taught as the foundation of his studies—*general pathology*. Thus we are led to the presumption that general pathology is the proper basis for practical medicine; and I venture to affirm that a chief reason why the practice of medicine has been commonly so distasteful, and so difficult in its study, and so unsatisfactory when tested at the bedside, is because its foundation, *general pathology*, has not been efficiently taught.

We have just met with a practical illustration of the truth, that general pathology

is a more efficient help at the bed-side than such knowledge of diseases as is to be obtained only from nosological definitions and details. Before I proceed to exemplify this truth, by matters of every-day experience, let me first briefly point out why it is so.

Without the connecting link of general pathology, practical medicine derives little or no aid from anatomy and physiology. Instead of being founded on them, it is studied and practised quite independent of a full knowledge of them, and is generally acquired in proportion as they are forgotten. This kind of practical medicine is much the same as that of old women and nurses; it consists chiefly of treating symptoms, or groups of symptoms (called diseases), by remedies that have been found useful in similar cases, without the trouble of inquiring about the causes of the symptoms, or the precise seat of the disease. Thus, if a person complains of headache and giddiness, leeches are applied, purgatives are given, because they have been found useful in similar cases. An intimate knowledge of the structure and functions of the contents of the head would give no further help in the use of these remedies; nor suggest others if these be found to fail. If they do fail, the only resource is in experiment: first one thing is tried, then another, until much mischief may be done, or at last, perchance, the right remedy may be hit upon; and this may be the very opposite of those first used. Long experience may make the symptom-treating practitioner more successful, if he be an observing man; because it will acquaint him with additional symptoms to be considered for the guidance of the treatment. But there are few of this class of practitioners who are carefully observing men, who do remember and profit by their experience: they more generally, like their sisters, the nurses, keep pretty close to their first notions; and although age and the name of experience may screen *their* failures, alas for the young adventurer who sets sail on this tack!

But the benefit of such experience is gained at the commencement by the student of pathology. He has learnt to trace symptoms to their causes. Having been taught, by anatomy, the peculiarities of the circulation in the head, and by physiology, confirmed by clinical observation, that this circulation may be similarly impeded by opposite causes, inanition as well as fulness, he is prepared to find out, through other symptoms, which is the cause of the headache in the case before him; and he adapts his remedies accordingly.

In fact, a true pathology, or sound principles of medicine, is the embodiment of the result of experience in disease, with a knowledge of structure and function in health. It is the only connecting link between the preparatory sciences and practica

medicine. *Without* it, these are *dissecta membra*: *with* it, they form a connected body of science—young yet, it is true, and falling short of the objects of the art, but already available for much, and needing only the growth and continued support of its chief members, especially anatomy, physiology, and clinical observation, to become the perfect and efficient director of practical medicine.

The great proof of the practical utility of general pathology is the aid which it gives in the study of clinical medicine, and the light which clinical medicine continually throws on it. The states which the practitioner has to treat are often too indefinite or too mixed to correspond with any of the definitions of special disease. They frequently consist of functional disorder, varying with time and circumstance, or changing its place, so as to present no fixed characters. But, compared by the pathologist with the standard of health, and analysed from their complexity, their nature becomes intelligible, and their proper treatment obvious, so far as means are possessed to counteract or control that which is wrong. Let us take one out of many examples. The disordered state of health, for treating which Mr. Abernethy gained such a reputation, is one of the commonest ailments we have to prescribe for: some call it, with Abernethy, "all stomach;" others, "liver"; others, "disordered constitution"; others, "indigestion": but however differently they may name it, few refuse to treat it, as Abernethy did, by regulated diet, blue pill, and mild saline aperients, repeatedly administered. Now the pathologist analyses the symptoms of such a state, and in the white or yellowish-furred tongue, morbid eructations, tender epigastrium, sometimes full right hypochondrium, with extended dulness on percussion, the discoloured faces, the high-coloured and turbid urine, he finds proof of congestion and disturbed secretion of the liver and upper part of the alimentary canal; and he recognizes in the remedies employed means which, by increasing the secretions, relieve the congestion; and if these fail, he can suggest other measures which he knows to be efficacious in removing congestion, and restoring the natural secretions. Again, what confusion in diagnosis, as well as in practice, has arisen from comprehending, under the specific name *hysteria*, the most opposite and most varying conditions, merely because they are consorted with some nervous phenomena; so that this word becomes almost synonymous with *female diseases*. But, pathologically considered, the confusion in diagnosis, and, in some measure, the perplexity in regard to treatment, cease. In one group of such cases, the pathologist

finds really such signs of disordered *uterine* function as would justify the name: other symptoms, however varied, taking their origin from this disorder; and he thus discovers the necessity of directing the treatment to this cause. In another group again he finds the uterine function impaired; but this only in common with other functions; and all this in consequence of a *want of blood* throughout the body, which want is denoted by the waxy complexion, the pallid lips and gums, the loose yet easily quickened pulse, the panting breath, the feeble limbs, &c. Here the restoration of the blood is the obvious indication; and in proportion as this is effected, the symptoms of nervousness, debility, and loss of function, disappear. In a third group of cases, called hysterical, the pathologist discovers the opposite condition, that of *sanguineous plethora*, which, independently of any disorder of the uterus, causes trouble, sometimes in one part, sometimes in another, but especially in the nervous system, which, in most females, is peculiarly liable to disorder. Here, too, he is led to the most appropriate treatment.

This is but one instance out of many that might be adduced to show the great practical utility of a good knowledge of pathology. In fact, the leading rules of practice, those which guide the most experienced men, (although many are not aware of it, and would not acknowledge it), are founded on general views of diseased function and structure—that is, *general pathology*. You will not find that practical men treat a disease merely according to its name, or according to the nature of the local mischief. Inflammation is not always to be combated by blood-letting, nor hæmorrhage by styptics. The condition of the system—that is, of the functions, is to be taken into account; and the variations of this condition, the states of sthenia and asthenia, tone and debility, excitement and depression, plethora and anæmia, are the very subjects which general pathology explains and shows how to treat.

I say practitioners *do* act more on general ideas of disease than on their knowledge of particular diseases. They feel the pulse and the skin, to guide them in the use of blood-letting—whether they have found out the special disease or not. They examine the tongue and inquire as to the state of the evacuations, to guide them in the use of purgatives, under whatever complaint the patient labours. They consider the complexion and bodily strength in connection with dietetic measures; and the chief treatment of convalescence depends on rules suggested by general pathological knowledge.

There are other very important departments of medicine which are comprehended in general pathology, and with it have been too much neglected—I mean the study of the

causes of disease, and their modes of operating on the living body (*etiology*), and the means by which they may be avoided or counteracted, including *prophylaxis*, or the prevention of disease, and *hygienics*, preservation of health. Neither of these subjects can be satisfactorily comprehended without a sufficient knowledge of the elements and laws of disease.

Is it not, therefore, most important that these general views, which are so practical and so extensive in their application, should be well founded and carefully studied? Is it right that the leading doctrines of disease, leading, not in theory but in practice, should, as hitherto, be left to be picked up irregularly, from casual retrospects of study or experience, when they may be learnt as the very groundwork of practical knowledge?

What, then, is this general pathology, which we extol so much as the proper foundation of practical medicine? Let us first state what it is not. It is not a collection of hypotheses hung on solitary facts, and ingeniously devised to explain this or that symptom, or the *modus operandi* of this or that remedy. It is not any thing floating on (I can't say founded on) conjectural notions in anatomy and physiology, such as the existence and circulation of a nervous fluid, the presiding influence of the ganglionic system, or the vital attractions and repulsions of the circulating fluids; notions which, however they may hereafter be substantiated, are at present too speculative to form a foundation for pathology. Nor is it a partial set of opinions, erected on *one* only of the many peditments of fact on which the science of medicine should stand. Healthy anatomy, physiology, physics, chemistry, the study of clinical medicine, that of *materia medica*, morbid anatomy—neither of these *alone* can furnish a foundation for pathology—that foundation must be formed by *ALL*—the facts which all supply constitute the material of which it is built, and the general facts or laws of all must be brought to bear on the arrangement of these materials in the construction of a system of pathology.

Some advancement in these contributory departments is necessary before the work can be begun, and it is because they *have* advanced that the opportunity is afforded. Why should the science of medicine remain in a state of powerless infancy, when its members are progressively acquiring strength and maturity? Why should the art of medicine still be a groping about in blind empiricism, and an unintelligible confusion of facts, when science even now can afford it the beginnings of light and of order?

I have just said that the contributory sciences are sufficiently advanced to be generally applicable to practical medicine. The proofs of this in detail will, I trust, appear in the

progress of the course; but I will adduce here a few examples of a prominent kind. Disease, in so far as it is the result of *mechanical* change, or in part made up of mechanical elements, may be properly treated by *mechanical* means. It was the knowledge of this fact which led Dr. Arnott to invent that admirable contrivance, the water-bed, by which disease is often prevented and removed; and he has lately made another application of physical science in modes of applying pressure to parts with such equality as to control to any degree the circulation of blood through them, and thus to relieve pain, remove congestion, subdue inflammation, heal ulcers, disperse swellings, and arrest the growth, if not to effect the removal, of tumors and other morbid productions. Disease, so far as it is physical in its nature and in its effects, is to be investigated by physical means. Hence the advantage of acoustic science in assisting us in diagnosis of internal disease, and of optical science in enabling us to witness the minutiae of its operations and its products. I need scarcely add, that the treatment of disease is in some instances founded on, and in most cases guided by, knowledge thus obtained.

As an example of improvements in *anatomy* and *physiology* bearing on practical medicine, I may mention the late researches on the nervous system, and especially those of Dr. Hall. By these, much that before was unintelligible in diseases of the nervous system has been satisfactorily explained, and their diagnosis and treatment have received proportionate aid. Considerable light has been thrown on diseases of the liver and of the heart, by recent anatomical and physiological investigations of these organs.

The aids afforded by *chemistry* to the *materia medica* have been long acknowledged, and continue to increase; but chemistry is growing in importance in its applications to every department of practical medicine. It is now directly useful in the diagnosis and treatment of diseases of the urinary organs. It furnishes a key to the most important rules of diet, in health as well as in disease, and bids fair to supply much that is wanting in explanation of the origin of many maladies, and the most direct mode of preventing them. It is through the aid of organic chemistry, now far advanced—advanced too, mainly, by the labours and genius of an illustrious chemist who this day honours us with his presence (Professor Liebig)—that we may hope that experimental physiologists and clinical observers will be enabled to solve some of the dark problems of the operation of medicines—a subject replete with practical importance, yet one that still lies chiefly in the region of conjecture.

It will not be disputed that *clinical observation* has lately done much for the advance-

ment of the science of medicine ; and this not only because it is the test by which the contributions of other branches are tried, but also because in itself it is carried on with the minuteness and precision which are essential to science. This precision must apply not only to the modes of calculating facts, but also and most particularly to the correct determination and classification of these facts. The accuracy of counting is a mere facility in common arithmetic. The accuracy of observing and arranging the facts to be counted is the higher and rarer quality. Both are required in the prosecution of clinical research.

The whole department of practical medicine teems with examples of the benefits which it has derived from *morbid anatomy*. What should we know of the nature, products, and tendencies of inflammations and other diseases which alter the structure, but for the scalpel revealing them to our very sight and touch ? The minuteness with which it (morbid anatomy) has been pursued in connection with clinical observation, in regard to diseases of the lungs, heart, liver, kidneys, and alimentary canal, deserves especially to be mentioned as the great source of our improved theory and practice in these complaints.

It is not a general or superficial knowledge of any of these fundamental sciences that will avail to make them profitable to medicine. It is where their facts and laws have been carefully studied in relation to the living body that the advantage has become practical ; and this study has in many instances developed new phenomena, which reflect light also on the contributory science. The application of hearing to the distinction of diseases has given rise to a more intimate knowledge of acoustic science. Some of the most interesting facts and laws of organic chemistry have resulted from researches instituted with reference to the investigation of disease—as for example those of Prout, Wohler, and Liebig. In regard to anatomy and physiology, the instances are abundant. For example, the researches of Charles Bell, Foville, and M. Hall, on the nervous system, and those of Astley Cooper on the testicle and mamma, were conducted with express reference to diseases of these organs, and were often suggested by the knowledge previously possessed of these diseases. In this respect they followed John Hunter, who throughout his anatomical labours had an eye to pathology, and by observing disease, was continually guided to objects for these labours.

So we shall find, as we proceed to the details of pathology, that subjects which require further research are continually presented to us in a practicable form ; and I shall take occasion to point out some of

these, in the hope that some among you may be induced to cultivate ground which is rich in promise of important practical results.

Do not suppose, because I insist strongly on general pathology being the proper basis of practical medicine, that this will lead us to neglect the superstructure, *special pathology*. Individual diseases will be the chief subjects of the course, occupying 100 out of 130 lectures ; and I trust that their details will become much more comprehensible by the arrangement into which general pathology will enable us to distribute them. It is because I feel the vast importance and extent of our knowledge of individual disease, that I would endeavour to introduce you to it from the most advantageous and commanding position, and that position is afforded by a previous acquaintance with the general features of disease. In fact, individual diseases are like the leaves and boughs of the tree of which general pathology constitutes the trunk and great branches—all preserving an identity and connection, yet each portion having peculiarities of character which require separate study. Or medicine may be compared to a great edifice, the foundation and great entrances of which represent pathology, which generally give the proper approach to the separate rooms, special diseases. To some of these, in the imperfect state of the structure, there may be access only by the dark back ways of blind experience, which there must not be neglected ; but this is no reason for making these *dark back* ways the only entrance.

Throughout our examination of the details of disease, we shall find the principles of general pathology continually exemplified ; and through these principles the mind can master the details to an extent wholly unattainable by those who pursue them as unconnected matters of fact. Those who begin the study of practical medicine by attempting to learn the details of diseases, are like those who would endeavour to master all the facts of chemistry without any knowledge of the general facts or laws of chemical action, affinity and definite proportions ; yet even in practical chemistry, or chemistry applied to the arts and manufactures, the most extensive and important services have been obtained from these very principles, applied to the details.

But in treating of individual diseases, although we shall find our previous pathological principles of great use in explaining and simplifying the details, we are not to be tied to them whenever experience varies from those principles, or goes beyond them, —there, experience must be carefully followed. There is no subject in which this simple statement of fact is more frequently necessary than in regard to the *modus operandi* of medicines. It is quite true that

many curious speculations have been offered on this subject. In fact, it seems to be quite the hobby, or the Pegasus, of a very speculative class of men who call themselves practical. These can tell you to a nicety how mercury cures syphilis; how opium causes sleep; on what precise parts of the intestinal tube each variety of purgative acts, &c. But as in most of such hypotheses there is much more of fancy than of fact; and as the fancy, if erroneous, may be mischievous in a strictly practical matter, I shall be excused if I prefer giving you the naked matters of fact.

The purpose of lectures on the practice of medicine is not merely to convey knowledge of disease and its treatment, but also to direct the mind in the ways of using this knowledge, and of acquiring more. Books will supply details which cannot be given in the lectures; but the more important additional source of information is *clinical instruction*. This is an essential part of the teaching of practical medicine. It is its demonstrative part, and is essential, not only because, like other witnessed phenomena, it appeals to the senses, but also because it is necessary to practise those senses in the examination of the signs of disease, and to exercise the reasoning powers in the interpretation of those signs, and in the further application of previously acquired knowledge. As general pathology is the connecting link between the preparatory studies and practical medicine, so clinical instruction is the step between the knowledge of medicine and the personal application of that knowledge in actual practice. I need not say that each of these is most necessary to the formation of a good practitioner: but there are especial reasons why clinical study, connected with the practice of medicine, is more indispensable now than it ever was. In former days medicine was little more than a matter of routine, and the examination of a patient was summed up in feeling the pulse, looking at the tongue, and asking a few questions as to the feelings and functions, and this was often done for the sake more of form than of information; for the pills and draughts were much the same in most cases. This was little better than quackery, and required no great preparatory study. That it sometimes succeeded to win the favour of the public is not surprising, seeing that quackery often had a similar or greater success. Then the ignorant practitioner could disguise his emptiness by a cloak of mystery, and a solemnity of manner, and could command confidence by dropping a hint about his experience, tact, and intuitive perception of disease. But, ignorant as people still are in medical matters, they are not so dull as to be deceived by these means. They have a smattering of physiology and the use of

remedies, and they are become troublesomely inquisitive; and if they are taken in, it is by the clever quack, who is ready with his theories and persuasive proportion of cures, and not by the unsatisfactory regular, who examines but little, and cannot explain his views or his practice. In short, the public look for what they have a right to expect, thoroughly educated practitioners, who prove their qualifications by their careful method of investigating disease, the clearness with which they give their opinions, and the general correctness of those opinions.

This, then, is another reason for thoroughly availing yourselves of practical instruction, especially in the clinical department. The great importance of this department has occasioned the adoption of extended measures for teaching it. I trust that you will prove, by the assiduity and success of your practical studies, that the College has not adopted these means in vain; but that, as in the preparatory branches, so in the finishing of your medical education, you will obtain that high standard of qualification that must ensure the confidence and esteem of those among whom you may exercise your calling.

Gentlemen, we have great pleasure in meeting you again for the session—those who have favoured us before, as old friends; new-comers we welcome to the work; which, although arduous, is not one of drudgery. I almost envy the pleasure, in young and ardent minds, of rising step by step in knowledge, and delighting in the wonders and beauties of the enlarging view. I admit that the ascent is arduous—that it requires hard labour, and no little self-denial. But is there no compensation in the delight of acquiring knowledge and intellectual power? No gratification in learning and contemplating the intricate beauties of the most perfect part of the creation? Is there no moral and religious good to our own minds in tracing out and unveiling its frailties, weakness, decay, and death? No satisfaction in learning of means which a Gracious Providence supplies for preventing and removing the ills which flesh is heir to; for relief of pain, suffering, and weakness, and restoration of health and strength? And if from present studies you carry your anticipations onwards to their final object in practice—under heaven, yourselves to ease suffering humanity, and to invigorate and prolong life—is the pursuit less noble, or less worthy of your highest thought? Need I say more for the intellectual and moral greatness of our art?

Is a study noble in proportion to the breadth, and depth, and diversity of the knowledge on which it is founded? Then, think of medicine; how she levies her contributions from every branch of knowledge. The human body exhibits a machinery so

perfect, that the most skilful mechanical philosopher may take lessons from studying it. It contains a laboratory so diversified, and chemical processes so subtle, that therein the ability of the most expert chemist is far surpassed. But the knowledge of the student of medicine must go beyond that of the mechanical and chemical philosopher. He must study those vital properties, of which they can tell him nothing. He must become acquainted with the attributes of life operating in matter. In animal generation, nutrition, growth, secretion, motion, and sensation; in the variations of these processes, in their decay, and in their cessation, which is death, he has a complicated study, peculiarly his own, in addition to those of a more elementary nature. He has, besides, to contemplate the body under disease, and to bring to his aid the three kingdoms of nature, and almost every art and every science, for agents and means to counteract and control that which disturbs its well-being. But is the body the only object of his care? No. Mind and matter are too closely combined to be studied or treated apart. To medicine alone it belongs to contemplate and to treat the **ENTIRE MAN—PHYSICAL, MORAL, AND INTELLECTUAL.** What can I say more of the intellectual greatness of our art?

Neither shall I strain your thoughts far to remind you of its moral worth. See its effect on masses of mankind, displayed in the progress of the happy discovery of Jenner! See how even barbarous people and idolaters, Mussulmen, Hindoos, and Chinese, respect our nation only for the medical aid which it can supply. So that it has happened that medicine has become the handmaid of religion—a bond between countries, a peace-maker between nations.

But let us not vaunt ourselves. Listen to one who speaks of our art—and that one the eloquent ambassador from the United States, the Hon. Edward Everett. I quote from the *Times* of the day before yesterday. "For what was that which constituted the chief pride and glory of the British nation? They had heard of the intercepted letter from one Chinese chieftain to another; and what was the characteristic which had excited the admiration of the mandarin of a great and important empire, reeling at the time under the blows of the British Government? Was it the military prowess of their countrymen? Was it the steam-vessels of war reaching coasts in defiance of the desolating simoom? Was it their arms—their artillery—their skill of engineering, which civilized nations now brought to the strategy of war? Was it this, or any of these, which had struck with wonder, and awe, and admiration, the barbarians of China? No! It was the humanity of British physicians and

surgeons—their management of hospitals, and the generous kindness which was extended to the sick and wounded, even of a hostile nation—which moved them with astonishment, and excited their sympathy and regard. These were some of the arts of peace which extorted the admiration of an enemy, and which other states would do well to imitate."

But if you would see the moral influence of medicine depicted in its liveliest hues, I would ask you to contemplate a domestic scene: a family whose hearts are wrung with a dreadful anxiety for one vibrating between life and death. What a ministering angel does the physician seem! How they watch his every look! With what breathless earnestness do they hang on his words! and those words, how they wing themselves to the souls of the bearer for sorrow or for joy! Yet such scenes are passing daily and hourly in every class of society—in the mansion and in the cottage: they open the hearts of all; for the moral influence of medicine is bound up with the treasures of life and health, and with all those endearing ties that make these treasures doubly precious. Nay, how often, with the hopes, or fears, of a blessed or an awful eternity!

Do not think me too enthusiastic, nor over-rating the profession you have chosen. Morally and intellectually I cannot over-rate it: and now, at the commencement of a new epoch of your studies, when toil and exertion are required, I would cheer and encourage you, by reminding and convincing you of the intrinsic gratification which these studies may afford, and of the nobleness of the objects for which they prepare you.

It is the fashion to decry our profession—to call it a poor profession; a degraded profession. If it be poor and degraded, is that the fault of the calling, or of those who practise it; or rather of those who should have governed and protected it? Is the art of healing in itself less noble, because its practitioners, unsupported by the arm of civil power, and too often unsustained by a consciousness of their own dignity, have not raised it to the place in society which it ought to hold? Poor it may be, but degraded it cannot, shall not be, so long as its foundation is science, and its end the good of mankind.

INSANITY IN WALES.

To the Editor of the Times.

SIR,—Your pages are so constantly open to the exposure of errors and to the advocacy of the cause of sufferers, that I feel assured you will give a place to the facts herein stated; and I beg you to use them as you think best.

During a recent visit to the northern counties of Wales I sought information on the state of the insane poor—it being a subject in which I have many years interested myself. I found in the counties of Anglesea, Carnarvon, Denbigh, Flint, Merioneth, and Montgomery, containing a population of 396,254 souls (195,721 males, 200,533 females), that there were 644 (306 males, 338 females) insane persons chargeable to the different parishes within those counties as “lunatic paupers.” This number, when compared with the population, will give us about one pauper lunatic to every 596 of the whole population—about one male in 639, and one female in 560. The number of the insane amongst the other classes could not be ascertained; but, from the many I was informed of, I am led to believe that in numerical proportion they are at least equal to their poorer brethren; making a frightful exhibition of the demented amongst our Welch neighbours.

The actual numbers of the insane poor in the different counties were said to be as follows:—

	Population.	In round Nos.
Anglesea . .	50,890	92 or 1 in 553
Carnarvon . .	81,068	146 „ 555
Denbigh . .	89,291	105 „ 850
Flint . .	66,547	62 „ 1,073
Merioneth . .	39,238	101 „ 388
Montgomery	69,220	158 „ 438
		664

These poor creatures were distributed and disposed of in the following manner:—

Mal. Fem. Tot.

6 13 19 in English lunatic asylums.
 17 15 32 in Welch Union Workhouses.
 140 163 303 living with relatives.
 143 167 300 living with strangers, or more properly “farmed out” to
 306 358 664 these, at various weekly sums, according to the degree of utility they could be of to their respective masters.

The few who were living in lunatic asylums cost their parishes, on an average, about 12s. per week; those in the Workhouses about 2s. 3d.; those with the relatives about 2s. 6d.; those with strangers about 3s. 2½d. The highest sum allowed to a relative was 5s. 6d.; to a stranger, 7s. per week. Several were stated to be provided for upon the handsome allowance of 9d. per week; whilst a few enjoyed riches with the more peculiar sum of 3d. per week.

A return which is now being made to the Poor Law Commissioners will hereafter give the facts connected with this subject, not only for the counties I have enumerated, but for the whole of England and Wales, in a fuller and more detailed form.

It will be anticipated that, with 664 insane people thus disposed of, there should

be in circulation abundance of reports and heart-rending narratives. Many of the poor lunatics would, unavoidably, be under severe restrictions. Some would be deemed unsafe to the public and themselves unless securely chained to the wall or the floor of their contracted apartments. Some would be thought well enough treated if confined to a chamber, and their food and their clothing supplied to them through some narrow opening; others would enjoy the outhouse and the society of the lower animals. Light clothing and spare diet would of course be prescribed in all cases as proper to bring down the high state of mania, and those who were melancholic and depressed would be happy indeed if left to their own wretchedness, and not roused up to shake off their lethargy and low spirits. Some are said to enjoy their freedom, and to roam uncontrolled about the country*, and such must occur where so many are so totally unprotected.

This leads to a most curious fact in Welch economy. I was assured, again and again, that there was not in the whole principality a lunatic asylum, either public or private, charitable or speculative. In vain I sought one†, and to this fact is to be ascribed that so few of the cases are placed in an asylum at all. Perhaps the greater mercy to the individuals themselves would have consisted in their total exemption from this, and in their remaining amongst their kindred or their countrymen.

So few of the lower class of the Welch, except some in towns or in the precincts of the inns, speak English, and this only for the purposes of commerce, or to qualify themselves for the duties of menial servants, and not to an extent which would enable them to comprehend anything higher,—whilst both the officers and servants of our English asylums, and the English public too, are equally ignorant of the Welch language,—that when the poor Welchman is sent to an English asylum he is submitted to the most refined of modern cruelties, by being doomed to an imprisonment amongst strange people, and an association with his fellow-men, whom he is prohibited from holding communion with. Nothing can exceed his misery: himself unable to communicate, or to receive communication; harassed by wants he cannot make known, and appealed to by sounds he cannot comprehend, he be-

* See a letter in the *Lancet* for June 25, 1842, in which gross enormities of this kind are described as occurring in the neighbourhood of Carmarthen.

† Since the above was written, Dr. Prichard, of Bristol, one of the Metropolitan Commissioners on Lunacy, has informed me, that there is a lunatic asylum near Haverfordwest, which he had visited. It is quite unknown in North Wales and elsewhere.

comes irritable and irritated; and it is proverbial in our English asylums that the "Welchman is the most turbulent patient wherever he happens to become an inmate." In vain is it in these cases that the professional treatment is judicious—the mortal humane—that the attendants are kind, or locality cheering; suspicious from the nature of his disease, and unconscious of the directions given him, he finds himself required to conform to the regulations of the establishment, which differ from his previous habits, and to submit to discipline for his own benefit, and he assumes all this to be so much insult and unkindness shown to him personally; and as he is not susceptible of an explanation to the contrary, he resents them with violence, and opposes them on the principle of self-defence. Then, again, as he cannot be approached by conversation, he loses those great advantages which in well regulated asylums are carried to a great extent, of personal communion with educated minds, who lead, direct, and control the wandering spirit of the lunatic, and bring it back by insensible degrees to his own guidance: he loses, indeed, all the advantages of the greatest of modern improvements in the treatment of the insane—judicious conversation with properly selected persons. It will not then be matter of surprise if the poor Welchman, after having undergone this species of solitary confinement in our English asylums, should leave it at least no better, and often worse, than when he entered it; and this, I believe, is usually the case.

I have known an instance of an individual becoming master of himself on quitting the control of those whose language he could not comprehend, and who previously was most violent and dangerous, and many instances could be cited of tranquillity occurring on hearing the sound of his native tongue. The effect of his own language upon the Welch lunatic I had lately an opportunity of observing in two cases, neither of whom spoke or understood English, and who derived more comfort and made more progress towards recovery through an occasional conversation with a Welch clergyman, who conveyed to them what were my wishes towards them, than by all the other means which are placed at my command.

In much the same situation as the pauper is the Welchman in the middle class of life—who, like the former, rarely speaks or understands English, and who, if insanity overtakes him, must be banished for security-sake amongst foreigners, or be maltreated by his well-disposed friends at home.

It is impossible this state of things can be known: or, if known, in fact, be estimated by its consequences; it could not if once appreciated remain as a blot upon Welch humanity and as a discredit to a country

renowned throughout the world for its practical benevolence. To give it publicity I have presumed to state it.

An attempt, I have the gratification to state, is making in the county of Denbigh to establish an asylum either to be maintained by the county or adjoining counties under the 9th George IV., or to be built by voluntary contributions, and to be conducted upon the self-supporting principle. Either form of such asylum would be the greatest blessing to the Welch lunatic, who, if then separated from his kindred and deprived for a time of his liberty, would yet receive advice and consolation in his native tongue; would be enabled to hold communion with his fellow-men; and would enjoy that privilege with which man alone is endowed—the gift of speech and the delights of conversation.

Towards such an asylum many donations are proffered, amongst them a munificent one in a piece of land of about 20 acres, most beautifully situated for the site of an asylum, and which cost its liberal donor about £2,000. With such a beginning the establishment must succeed, and to all others who have means, and to every Welchman, according to his means, I would presume to say "Go thou and do likewise."

Feeling assured that the nature of my subject will be in itself an apology for my intrusion upon the public and yourself,

I beg to remain, Sir, your obedient servant,

SAMUEL HITCH, M.D.

Resident Physician of the Lunatic Asylum
for the County of Gloucester.

Gloicester, Sept. 15, 1842.

METEOROLOGICAL JOURNAL.

*Kept at EDMONTON, Latitude 51° 37' 32" N.
Longitude 100° 3' 51" W. of Greenwich.*

<i>September.</i>	THERMOMETER.		BAROMETER.	
Wednesday 28	from 48 to 55		30.00 to 30.01	
Thursday . 29	44 55		30.01 30.07	
Friday . . . 30	43 55		30.12 30.13	
<i>October.</i>				
Saturday . 1	42 53		30.15 30.19	
Sunday . . 2	32 54		30.25 30.12	
Monday . . 3	35 55		30.02 29.96	
Tuesday . . 4	40 55		29.96 30.05	

Wind, N. and N.E.

The 28th and 29th ult. showery, otherwise generally clear.

Rain fallen, '21 of an inch.

CHARLES HENRY ADAMS.

NOTICES.

The continuation of Dr. Moore's paper is postponed till next week, owing to an accidental but unavoidable circumstance.

Our correspondent at Bristol is informed, that Dr. Lee's Lectures will be continued each week.

WILSON & OGILBY, 57, Skinner Street, London.

THE
LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, OCTOBER 14, 1842.

LECTURES

ON THE

THEORY AND PRACTICE OF
MIDWIFERY,

*Delivered in the Theatre of St. George's
Hospital,*

BY ROBERT LEE, M.D. F.R.S.

LECTURE II.

*Of the Bones, Articulations, Dimensions,
and Diseases, of the Female Pelvis.*

IT is necessary to commence with the anatomy and pathology of the female pelvis, as the process of delivery cannot be understood, nor any of the operations of midwifery, as craniotomy, induction of premature labour, and turning, performed; the forceps applied, or the placenta extracted, without a knowledge of the pelvis, both in its healthy and morbid states.

The *pelvis* consists of the *ossa innominata*, the sacrum, and the coccyx. The sacrum and coccyx form the back part of the pelvis, the *ossa innominata* its sides and front.

The *sacrum* is of a triangular shape, smooth, and concave on the anterior surface, and convex and irregular behind. Its base or superior surface is about four inches in breadth, and the central part, which is of an oval form, corresponds with the inferior surface of the body of the last lumbar vertebra, to which it is united by an elastic fibro-cartilaginous substance. The anterior part of this substance is thicker than the posterior, so that these bones form a considerable angle anteriorly, which is called the promontory, or great angle of the sacrum. From this on each side the bone expands, and is inclined outwards to the sacro-iliac symphysis. The superior lateral surface is broad and irregular, to articulate with the ilia, and in the recent state is covered with cartilage. The

inferior border is thin, and gives attachment to the sacro-sciatic ligaments. The anterior surface of the bone, which is broad at the upper part, and narrow towards the apex, presents four transverse ridges, formed by the ossification of the cartilages which separated the bones of the fœtus. At the ends of these ridges there are four pair of large foramina for the passage of the anterior sacral nerves. Both these sets of foramina communicate with the sacral canal, which is curved like the bone, and is of a triangular form. On the median line, behind the canal, is situated an irregular ridge, formed by the union of four small eminences, which correspond with the spinous processes of the four constituent vertebræ. At the base of the bone there are also two regularly formed oblique processes, to articulate with those of the last lumbar vertebra.

To the apex or inferior extremity of the sacrum is attached the *os coccygis*, which is of a pyramidal form, and in children consists of three or four small spongy bones, the bodies of as many rudimentary vertebræ, the uppermost of which is the largest, and has two cornua or eminences which project posteriorly. The coccyx is flexible, and also moveable backwards upon the sacrum, with which it forms an obtuse angle. There is a thin layer of fibro-cartilage between the contiguous ends of these bones; and this articulation is surrounded with a capsular ligament. An anterior ligament is placed along the front of the sacrum and coccyx, and a posterior ligament behind.

Each *os innominatum*, in young subjects, is divided into three separate bones: the ilium, the os pubis, and the ischium. The *ilium*, which forms the upper and largest part of the bone, is flat, broad, and somewhat triangular in its shape. Its outer surface is convex before and concave posteriorly. The inner surface of the bone, named the internal iliac fossa, is smooth and concave, at the under part of which is the linea innominata, forming the lateral part of the brim

of the pelvis. The superior convex border of the ilium forms the crest or spine, which terminates before, in the anterior and superior spinous process. A little below this is situated the anterior and inferior spinous process. The spine of the ilium terminates behind, in the two corresponding posterior spinous processes, below the latter of which is the sacro-sciatic notch. The inferior and outer part of the bone forms the upper and back part of the acetabulum.

The *ossa pubis* are situated at the inner and anterior part of the *ossa innominata*. The body of each os pubis is placed transversely before the anterior part of the ilium. The upper and inner part of the bone enlarges, and forms the crest or angle, from the outer and fore part of which the spine extends horizontally backwards, to form, with a similar corresponding ridge in the ilium, the *linea-ileo-pectinea*. The inner part of the os pubis becomes narrower, and runs downwards to join the ramus of the ischium, and form along with it one side of the arch of the pubes.

The *ischium* forms the inferior portion of the os innominatum and of the acetabulum. The body of the bone sends off the spinous process, which is about half an inch in length, and projects obliquely downward and backward, and gives origin to the innermost sacro-sciatic ligament. The lowest portion of the ischium, which is thick and narrow, terminates in the tuberosity, from which, on the inside, the smooth plane proceeds obliquely upward. In the natural situation of the *ossa ischia* their planes converge to the tuberosities, and this has an influence on the foetal head in labour as it approaches the outlet of the pelvis.

The obturator, or thyroid foramen, in the anterior part of the pelvis, is formed by the ischium and os pubis.

Articulations of the pelvis.—The bones of the pelvis are united by cartilages and ligaments, and never separate during labour, or at any other time, so long as they continue in a healthy state. The surface of each os pubis is covered at the symphysis with a layer of cartilage, and between these two layers of cartilage an elastic fibrous tissue is interposed, which prevents their separation from one another: the fibres of this substance pass between them transversely. I have only once seen a small cavity between the cartilages covering the bones of the pubes. A strong ligament is stretched across under the symphysis, and the whole articulation is surrounded with ligamentous fibres. The articulating surfaces of the *ossa innominata* and sacrum are covered with cartilage, and have corresponding elevations and depressions. Each sacro-iliac symphysis is surrounded by strong ligamentous bands, and the sacro-sciatic ligaments assist in pre-

venting a separation of the bones. These ligaments extend from the sacrum and coccyx to the spinous process and tuberosity of the ischium, by which means the sacro-sciatic notch is converted into an oval foramen, through the upper and back part of which the sciatic nerve passes to the lower extremity.

The pelvis is divided into the brim, the cavity, and the outlet.

The *brim*, or superior aperture, is usually of an oval form, to correspond with the shape of the foetal head. The distance between the base of the sacrum and symphysis pubis is usually about four inches. This is called the conjugate or sacro-pubic, or antero-posterior diameter of the brim. The long or transverse diameter, which crosses this at right angles, extends from ilium to ilium, and usually measures about five inches. The plane of the brim is inclined downward and forward, so as to form a great angle with the spinal column.

The *outlet* of the pelvis is of an irregular quadrangular form, and is not parallel with the brim. A line drawn from the inferior border of the symphysis pubis to the extremity of the coccyx, when the bone is pressed back, measures five inches. This is the longest diameter of the outlet, and it crosses at right angles the long diameter of the brim. Between the tuberosities of the ischia the distance is about four inches.

Behind the symphysis pubis the *cavity* of the pelvis is an inch and a half in depth; it is three inches deep on the sides, and about six from the base of the sacrum to the point of the coccyx. A line drawn through the brim, cavity, and outlet of the pelvis, equally distant at all points from its sides, represents the *axis* of the pelvis. In the living body it is impossible to determine precisely the course of this line, and it is sufficient, in practice, to know that the pelvis is a curved canal, and that whatever passes through it must follow a line corresponding with the curvature of the sacrum. The head of the foetus is of an oval shape, and it usually measures four inches from the forehead to the occiput, and three between the parietal protuberances. In natural labour the head enters the brim in such a manner that its diameters nearly correspond with those of the pelvis, the ears being near the sacrum and pubes, and the forehead and occiput placed towards the sides of the pelvis. As it descends through the cavity to the outlet, the opposite sides of the head are pressed against the converging planes of the ischia, and the occiput is turned so as to present under the arch of the pubes, and the forehead to press against the perineum and coccyx.

There are various soft parts which connect the uterine organs, bladder, and rectum, with the bones of the pelvis, and diminish their irregularities. The outlet is nearly closed

by a septum formed of parts which are chiefly muscular: the levator ani and coceygæi muscles form the superior, and the sphincter ani, transversus perinæi, and constrictor vaginæ, the inferior plane of muscles. The hemorrhoidal and pudic vessels and nerves, with adipose and cellular membrane, also contribute to fill up the inferior aperture of the pelvis. This septum at the outlet of the pelvis is pierced by the urethra, vagina, and rectum, in the mesial plane. An aponeurosis arising from the great sciatic ligament and the inner edge of the arch of the pubes covers the inferior surface of this septum. In the living body the psœ muscles, with the iliac blood-vessels, extend along the sides of the brim of the pelvis, and modify its form.

In infancy the pelvis is long and narrow, the sacrum is slightly curved, and the transverse diameter of the brim is shorter than the sacro-pubic. The form of the brim and outlet of the foetal pelvis is preserved through the whole course of life in the male. The bones of the male pelvis are stronger and thicker than in the female, the cavity is less capacious, and the pubic arch is smaller.

Diseases of the articulations and bones of the pelvis.—The cartilages interposed between the ossa pubis and the sacrum and ilia, may become softened, or be destroyed by inflammation and ulceration, like fibro-cartilage in other parts of the body, and the bones may separate and become moveable on each other. This rarely happens, except in pregnant or puerperal women; and is most frequently one of the remote consequences of inflammation of the veins, absorbents, or muscular coat of the uterus.

Arrest of development.—In some women the pelvis is not developed in the usual manner, and it remains small through life, though not distorted. Its condition is very different from what it is in childhood. When this arrest of development takes place in the pelvis, even though the foetal head should not be remarkably large, all the evil consequences which usually result from a disproportion between the head and pelvis follow. Mr. Shaw attributes this interrupted growth and defective capacity of the pelvis to rickets; but in the person from whom this striking specimen [here Dr. Lee showed a preparation] of the disease was obtained, there was no bending of the spine or cylindrical bones of the extremities, or any appearance of rickets in any part of the body. The brim of the pelvis is of an oval form, and measures three inches from the promontory of the sacrum to the symphysis pubis, and four inches and a half in the transverse diameter. The distance between the tuberosities of the ischia is three inches and a quarter. The ossification of the sacrum and ossa innominata is very imperfect. The

bones of the extremities were not bent, and there was not the slightest external appearance from which the actual condition of the pelvis could have been known before the labour commenced. It took place on the 22d of April, 1836, and the nates presented and were extracted by a blunt hook passed over one of the groins, when they could not pass by the natural efforts. The trunk and upper extremities of the fœtus were drawn through the pelvis without much difficulty, but the head remained long immovably fixed above the brim: the perforator was passed up to the occiput, and the head opened and ~~extracted~~ with the crotchet; but she died from inflammation of the uterine organs and cellular membrane of the pelvis. Had the state of the pelvis been known, premature labour should have been induced.

Distortion of the pelvis from malacostœon or mollities ossium.—When the bones of the pelvis are affected with this disease, they become so soft that they cannot support the weight of the head, trunk, and upper extremities. The quantity of earthy matter in them is much diminished, and their internal structure is often completely changed. Within a thin bony layer on their surface there is sometimes contained a soft bloody substance of a dark colour. This disease occurs only in adults, and may be confined to the bones of the pelvis, or it may affect at the same time the vertebral column and the long bones both of the upper and lower extremities. In some cases the bones of the extremities have been fractured by the application of a slight external force, or by the action of the muscles in turning the body round; and as the disease proceeds, the bones of the spine and extremities have become bent, and an extraordinary degree of deformity and shortening has taken place. In one case the trunk of the body, at the time of death, measured only thirty-two inches in length; and in another case, related in Gooch's Surgical Observations, the patient was found to have lost two feet two inches of her natural stature. The brim, cavity, and outlet of the pelvis, are all more or less changed by this disease. The promontory of the sacrum projects unusually forward, and encroaches upon the short diameter of the brim. In some cases the symphysis pubis and great angle of the sacrum have been forced within an inch of one another. Sometimes the base of the sacrum is pressed down by the weight above into the cavity of the pelvis, and the last lumbar vertebra comes to occupy its place. The lower end of the sacrum is often also bent upward, and the long diameter of the outlet proportionally diminished. The heads of the thigh bones press the sides and front of the pelvis inward and backward, towards the sacrum, so that the oval shape of the brim becomes triangular

or cordiform. The tuberosities of the ischia are sometimes pressed together, so as to be almost in contact, and the arch of the pubes so contracted that it cannot be said to exist.

When this affection has commenced in the bones of the pelvis, it proceeds with greater or less rapidity till the high degree of distortion is produced which you see in this pelvis, [here a preparation was exhibited] and in some of these casts, taken from the pelvis of women who became pregnant, went to the full period, and died after they were delivered by the Cæsarean operation. The disease runs its course with great celerity in some cases; in others the softening of the bones goes on for several years. This happened in the instance related by Sir Charles Bell, where the Cæsarean section was performed, the patient having been repeatedly pregnant, and as the disease advanced greater and greater difficulty was experienced in effecting the delivery in each successive labour, until, at last, the dimensions of the brim of the pelvis were so diminished that it was found impossible to deliver the child by craniotomy. The distance from the sacrum to the symphysis pubis did not exceed an inch, and there was not sufficient space on either side of the pelvis to admit of the head being drawn through by embryotomy, even if it could have been performed.

This fatal disease is very rarely met with in London. Only one case has come under my observation, and from its history, perhaps you will learn, better than from a general description of the disease, its early symptoms, and the changes which take place in the pelvis during its progress, and the great and almost insurmountable difficulties it presents to delivery if the pregnancy is allowed to go on to the end of the ninth month. A woman, aged 30, had been forty-eight hours in labour, with her fourth child, when I was called to deliver her, on the 17th of January, 1830. The pelvis was very greatly distorted, the whole head of the child was above the brim, and the orifice of the uterus was not more than half dilated. The pains had nearly ceased, and she was completely exhausted. After perforating the head, three hours elapsed before I succeeded in extracting it with the crotchet, and not till all the bones had been literally torn to pieces. She recovered as if it had been a natural labour. She was a native of Manchester, and had spent several years in one of the cotton manufactories of that town. She married at 20, and had given birth to three children at the full period without assistance. During the fourth pregnancy, she suffered much from pains about the sacrum and ilia, which were supposed to be rheumatic, and she had become unable to walk. On the 11th July, 1832, this patient was again in labour at the

full period, having refused to submit to the induction of premature labour. The labour continued upwards of thirty hours before the os uteri could be felt, or the presenting part ascertained; and during fifteen hours it appeared extremely probable she would die undelivered if we did not perform the Cæsarean operation. The head was perforated and extracted, but with still greater difficulty than in her previous labour. She recovered again, in spite of all the violence that had been employed in extracting the head, as if it had been an easy and natural labour.

In the month of June 1833, when she was at the end of the third month of her next pregnancy, I passed up this slender silver catheter [showing the instrument] into the uterus, and drew off the liquor amnii, and the foetus was expelled eight days after without any assistance, and she recovered as if it had been a common abortion. On the 12th February, 1835, I induced premature labour in the same patient at the commencement of the seventh month of the following pregnancy, and the foetus was expelled without assistance, dead, and she recovered again in the most favourable manner.

On the 19th of January, 1836, when she was at the end of the sixth month of pregnancy, I made an unsuccessful attempt to perforate the membranes; the ergot of rye was given, but it completely failed to excite uterine contractions. Other attempts were made to bring on labour during the two succeeding months, without effect, and it is probable she would have gone to the full period had I not, in the meantime, provided myself with this stiletted probe-pointed silver catheter [showing the instrument]. This was readily passed into the uterus, and the membranes perforated on the 14th March. Labour followed in a few days, and the nates presented. When the os uteri was sufficiently dilated, the point of the crotchet was forced through the anus into the pelvis of the foetus, and fixed upon the bones, and the trunk and extremities of the child were drawn with great difficulty through the mother's pelvis. The perforator was then passed up to the occiput, and a free opening made in the back part of the skull, and the head extracted with the crotchet. Several hours were spent in accomplishing the delivery, and she died the following day, with vomiting and other symptoms of ruptured uterus. On dissection, I found the muscular coat of the anterior part of the neck of the uterus deeply lacerated; the brim and cavity of the pelvis, you see, [showing the preparation] are very much distorted. The last lumbar vertebra occupies the usual situation of the base of the sacrum, which is pressed down into the cavity of the pelvis; the bones of the pubes

have been forced together, so that the brim has a triangular shape. On the left side, a line drawn from the middle of the last lumbar vertebra to the ilium behind the acetabulum measures one inch and a half. On the right side, a corresponding line measures only an inch and a quarter. From the middle of the last lumbar vertebra to the bones of the pubes, the distance is an inch and three quarters. At the outlet the tuberosities are only three or four lines asunder, and there is no pubic arch. The lower extremity of the sacrum and coccyx pass horizontally forward, so that the apex of the coccyx is only two inches and a quarter from the point where the tuberosities of the ischia nearly meet; the bones of the extremities were not affected.

As pregnancy and delivery generally accelerate the progress of mollities ossium, I now think it would have been better practice, in this case, to have interrupted the pregnancy, or induced abortion in the course of the second month, which could safely have been done with this probe-pointed instrument, had I possessed it at the time.

Where the pelvis has been fractured, or the brim, cavity, or outlet, is much obstructed by exostoses, it would also be proper to induce labour at an early period of pregnancy, which would render the Cæsarean operation unnecessary.

In some systems of midwifery, instruments have been described for measuring the dimensions of the pelvis in the living body, and representations given of pelvimeters, some of which are intended to be applied, like a pair of compasses, to the outside of the pelvis, and others to be passed within it. If you examine this pelvis distorted by malacosteon, you will at once see that these instruments can be of no use whatever in practice: the bones of the pubes are here pressed together, so that the points of a pelvineter, applied over the symphysis pubis and base of the sacrum, would indicate a space in the short diameter of the brim of the pelvis about two inches greater than actually exists.

All the morbid conditions of the pelvis can be ascertained with sufficient precision during life by introducing the fore finger of the right hand into the vagina, and passing it around the interior of the pelvis. If the point of the finger cannot touch the promontory of the sacrum, there is little or no distortion of the brim, and by moving the finger from side to side and backward, it will readily be discovered if the tuberosities of the ischia are at the usual distance from each other, and if the direction of the sacrum and coccyx is altered.

Distortion of the pelvis from rickets.—The softening of the bones of the pelvis from rickets occurs generally before puberty,

and, in a great proportion of cases, the long bones of the extremities are likewise affected, and sometimes, also, the spine. But the spine is not unfrequently affected both with angular and lateral curvature, from ulceration of the vertebræ and cartilages, where the pelvis remains in the natural state. The changes produced in the pelvis by rickets are numerous, and do not differ essentially from those observed in malacosteon. In this short skeleton [showing a specimen] the head is remarkably large, the long bones of the extremities are all bent, and the pelvis is precisely in the same condition as the pelvis which you have just seen distorted by mollities ossium. The base of the sacrum is pressed forward, and the front and sides of the pelvis inward and backward, so as to give the brim a triangular shape. The tuberosities of the ischia have likewise been pressed into contact, and the arch of the pubes destroyed.

There is another form of distortion of the pelvis from rickets seen in other pelves and casts upon the table. The brim in these is of an elliptical shape, and the tuberosities of the ischia, instead of being nearer one another than usual, are separated to a greater distance, and the outlet of the pelvis appears enlarged. The sacrum, in most of these, is nearly straight from the base to the apex. In several, the distortion is greater on one side than the other. In all, the distortion has reached a certain point, and then appears to have ceased to increase, unlike what happens when the pelvis is affected with malacosteon.

The regular process of delivery is necessarily interrupted by all these morbid states of the pelvis. When the distortion of the brim is slight, the head is usually forced through after a protracted labour, and the child is often injured from the pressure it has sustained. When the distortion is greater, the head becomes arrested in the brim, and cannot pass till its volume is reduced: and where the distortion is in a still higher degree, the head of the child never enters the brim, however long the labour may be allowed to continue.

If the bones of the extremities are not much bent, and the pelvis not highly distorted, we are seldom consulted until the full period of pregnancy has been reached, and the person has been long in labour. The delivery may require to be completed with the perforator and crochet, and the dimensions of the pelvis are then, for the first time, ascertained. In a subsequent pregnancy, it becomes necessary to induce premature labour at the end of the seventh or seventh and a half month—an operation attended with little danger to the mother, and which has preserved the lives of many children which would otherwise have been

sacrificed. Even in a first pregnancy, when it is known that the pelvis is very much distorted, I hold it justifiable to induce premature labour.

RESEARCHES
ON THE
PATHOLOGY, PHYSICAL SIGNS,
AND DIAGNOSIS,
OF
DISEASES OF THE HEART AND
ARTERIES,
IN CONNECTION WITH
THE SOUNDS OF THIS ORGAN.

BY T. H. MOORE, A.B. M.B. T.C.D. &c.

[Concluded from p. 16.]

THE accession and progress of the symptoms, the physical signs furnished by auscultation, and the pathological lesions ascertained in the post-mortem examination, institute a degree of relationship between the preceding case and one published in the *MEDICAL GAZETTE* for June 25, 1841. In adopting some arrangement in our inquiries, it may possibly be attended with beneficial results to investigate—

First: the primary causes which predisposed to the formation of an aneurismal diathesis in the circulatory system of this patient, and of the morbid alterations in the viscera of the thoracic and abdominal cavities.

Second: how far we are justified in asserting that this aneurismal diathesis is capable of being diagnosed; that its recognition is dependent upon and characterized by a certain train of symptoms and physical signs.

Third: to what extent we are warranted in deciding upon the much-controverted question of the muscularity of the middle coat of arteries, referring to the pathological appearances recorded in the preceding case, and those observed in others, in many respects similar, as the basis of our judgment.

In the history obtained on the patient's admission into hospital, and from the symptoms by which the disease was ushered in, we possess sufficient evidence to prove that the primary predisposing causes of the aneurismal disease, in one division of the circulatory system, did originate in an acute inflammatory attack of the serous and muscular structures of the heart at a

period antecedent even to that stated, idiopathic in its character, not consecutive to any form of specific inflammation prevalent in the system, but probably co-existent with inflammation of the serous membrane of the lungs, or abdominal viscera, which inflammation, unchecked by the treatment pursued, progressed gradually, and finally assumed the subacute character so evident in several parts of the system.

In no part of the animal economy are the effects of inflammation, varied though they be in their forms, more manifest than in the structures of the heart, since, in the ventricular and auricular parietes of this organ, we may meet with the intermediate and extreme degrees of hypertrophy and atrophy; of induration and softening of all the tissues, and not unfrequently in the muscular parietes of the same cavity there are presented to our view pathological alterations diametrically opposed. In the left ventricle of this heart an opportunity has been afforded us of observing the change of colour; the flabbiness; the loss of tone; the partial degeneration of the muscular structure; morbid lesions consequent upon a subacute inflammatory action, constituting the rudimentary stage, and being introductory to the formation of an incipient aneurism; in which circumscribed space, a small sacculated pouch, composed of the serous and muscular structures of the ventricle, must have resulted, from the enfeebled, attenuated, relaxed condition of the fibres; from their inability to contract energetically in unison with those in the vicinity assisting in the propulsion of the arterial column of blood, and from the inadequate resistance opposed by them to the volume of the circulating fluid during the systolic action of the heart.

To the same source we may trace the predisposing causes of the lesions in the arterial tunics. To such we cannot deny a susceptibility to be attacked by the acute, subacute, and chronic stages of inflammation: nor can we exempt the serous, the fibrous, and other coats of these vessels, from the pathological alterations, so manifest in other portions of the system, consequent upon this inflammatory action, whether of a healthy or unhealthy — traumatic or atraumatic — character.

It now devolves upon the writer to advert to the much-controverted question of the muscularity of arteries—a subject of the highest importance—one which requires to be approached with caution, and treated of in a circumspect manner, when involved therein there are the opinions of the most eminent British and continental anatomists, physiologists, and pathologists; inasmuch as this question—so long at issue, but now apparently settled by the positive assertions of some, and the passive acquiescence of others—must be grappled with anew. Previous to expressing any opinion on this subject, I propose to extract, for the perusal and information of the reader, such portions of the writings of others as have direct reference to the subject.

“But it is the coat, which is placed between these two, that properly forms the arteries. It is dense, close, thick in proportion to the calibre of the trunks; yellowish; sometimes greyish; composed of very distinct fibres, adhering to each other, easily separable, however; disposed in concentric layers, nearly circular, and intimately united externally to the cellular coat, but not so much so to the internal membrane. None of these fibres follow a longitudinal direction. They do not at all appear to be muscular, but form what is called the elastic tissue.”—*Knox's Translation of Cloquet's Anatomy*, page 646.

The fibres of the elastic coat of arteries are distinguished from muscular fibres by chemical characters, as Berzelius has pointed out. The muscular substance is soft, and lax, and contains more than three-fourths of its weight of water, while the arterial fibre is dry, and very elastic. Muscular substance has the same chemical properties as fibrin of the blood; is soluble in acetic acid, with difficulty soluble in mineral acids, with which it forms compounds difficult of solution; while the arterial fibre is insoluble in acetic acid, but readily soluble in mineral acids, and its solution is precipitated neither by alkali nor ferro-cyanuret of potassium, which must happen if it contained fibrin. Dr. Hodgkin has also observed, that the fibres of the middle coat of arteries, when examined by the microscope, do not present the transverse striae which are seen on muscular fibres, &c. The dif-

ferent arguments for the existence of the pretended muscular contractility of arteries, which have been adduced from comparative and pathological anatomy, are of no weight. Not merely, however, are the arguments for the muscularity of arteries without grounds, but there are also counter arguments to disprove their muscularity. Berzelius justly remarks, that the strongest galvanic and electric stimuli, which produce contractions in all true muscular structures, excite not the smallest motion in arteries. Nysten repeatedly instituted galvanic experiments on the aorta of criminals just beheaded, but did not perceive the slightest contraction; nor could he excite any contractions in the aorta abdominalis of fishes by means of galvanism. Bichat and Wedemeyer performed similar experiments with the same results. I have myself made frequent experiments, with the aid of galvanism, to determine this question; and neither in frogs, with feeble or powerful degrees of galvanic influence, nor in mammalia—for instance, rabbits—with a pile of from sixty to eighty pairs of plates, have I been able to produce the slightest trace of contraction of the arteries.”—*Müller's Physiology*, translated by Baly, p. 202-3-5.

“Hypertrophy is another alteration to which the middle coat is often liable: when in this state, its natural organization becomes much more apparent: the yellow fibrous tissue of which it is composed becomes as evident in the human subject as it is in the horse; but never does it present any trace of muscular fibre, even in the most extreme cases of hypertrophy.”—*Andral's Pathological Anatomy*, translated by Townsend and West, p. 374, vol. ii.

John Hunter has expressed himself in a decided manner on this subject: his opinion is comprised in the following:—

“Every part of the vascular system is not equally endowed with muscles: the larger vessels, especially the arteries, being chiefly composed of elastic substances, whilst many parts of the smaller, or what are called the capillary vessels, appear to be entirely muscular.”

From a careful examination of the arterial tunics in this specimen, and other preparations similarly diseased, I feel a degree of confidence in protesting against their assertions, and advocating

in unequivocal terms that the fibres of the middle coat of the large and small sized arteries, be their calibre what it may, are essentially muscular; that they possess the appearance, the arrangement, the physical and chemical properties, and are subject to the same pathological lesions, as the muscular fibres in the tubular apparatus of the lungs, and the fibres in the different divisions of the alimentary canal; all which properties, however equivocal anatomists, physiologists, and chemists, may pronounce them to be in the healthy condition of the artery, yet are rendered so manifest in the pathological lesions to which these vessels are subject, that they are more than sufficient to dissipate our doubts, and confirm these statements. Who, in the current year, would have the hardihood to assert that the bronchial tubes of the ternary, quaternary, or septenary order of bifurcation, were destitute of muscular fibres; because to the eye of the anatomist they are often invisible; by the hand of the anatomist they frequently cannot be traced; and in the analytical experiments of the chemist, they may be found deficient in that proportionate quantity of fibrine entitling them to rank as muscular? Who is that physiologist, be his experiments performed with the most exquisite dexterity, who has succeeded in producing contractions of the muscular fibres in the bronchial tubes by the electric and galvanic stimuli, even though he employ triple the number of plates with which he failed when experimenting on the middle coat of the arterial tubes?

Far be it from me to speak disparagingly of those men who have shed such lustre in the several departments of science to which they have devoted their energies: far be it from me to deprecate, in the slightest degree, the accuracy of their experiments and the correctness of their observations; but in asserting that the fibres of the middle coat of arteries are as essentially muscular as those of the bronchial tubes and the alimentary canal, this opposition to their opinions, and advocacy for the muscularity of arteries, are in strict conformity with the results of pathological anatomy, exhibiting in many morbid preparations their direction, their arrangement, so remarkably developed, so clearly demonstrated, that our acquiescence in the reality of their existence is in-

stantly ceded, however reluctantly it may have been granted.

Furthermore, were but a few of the many specimens of thoracic, abdominal, and other aneurisms, or of diseased arteries, carefully preserved in our metropolitan museums, dissected with an ordinary degree of skill, the writer ventures to affirm that it is more than probable the fibres of the middle coat have become so much hypertrophied, so remarkably developed, that they can be obviously and convincingly demonstrated to be as essentially muscular as the fibres of the bronchial tubes in chronic bronchitis with dilatation of the bronchi, and those of the alimentary canal in the immediate vicinity of a contraction of its calibre.

In a variety of pathological lesions of the arterial system, the preparations of which were subjected to microscopic examination, the formation of small circumscribed accumulations of yellowish-coloured particles has been noticed, varying considerably in size, from a pin's point to the circumference of a silver penny; and in consistence, from a state of perfect fluidity to that of thick cream, collected into a soft pulp or pap, which, when washed away, an eroded, irregular, jagged depression was distinctly apparent: the continuity of the fibres of the middle coat being intercepted, and, as it were, destroyed by ulceration. To such a degree had this destructive process progressed, that the external cellular tunic has been visible underneath, and when held to the light was perfectly diaphanous; whilst the internal lining serous membrane, covering these yellow-coloured patches, had lost much of its natural polish, was discoloured, hypertrophied, rugous on its surface, in many places thrown into small but distinct folds, easily separable from the middle coat; but very seldom have I seen in this diseased condition of the artery an abrasion of its surface; whilst a complete dissection has been performed between it, and the middle coat, by the process of suppuration, which had originated in, was confined to, and progressed during the patient's life-time amongst the muscular fibres of the middle coat.

These observations, based upon the repeated dissections of morbid specimens of the arterial system made in the General Military Hospital, Phoenix Park, I am aware are at variance with

the experience of Professor Porter. His remarks on this subject are contained in the subjoined extract from the valuable work on Aneurism lately published :—

“The lining membrane, covering one of these spots, becomes soft, and soon exhibits a distinct ulcer, which proceeds from within, eroding the middle coat, either through the entire thickness to the cellular, which is then easily distended to the aneurismal sac, or so far that it shall be likely to give way, and tear under a trifling shock—even the impulse of the circulation.”—P. 43.

In the majority of cases the disease was pronounced to have originated in the middle coat, by the depositions of small globules of lymph in the substance of the coat, consequent upon the irritated and inflamed condition of its structures. These globules of lymph cohering to each other, formed small, circumscribed, concrete masses of fibrine, adhering to, and not unfrequently imbedded in, the substance of the middle coat: their organization at those parts was progressive; their increase of size, and transition from a semifluid, tenacious exudation to the firm, semitransparent, resisting force being commensurate therewith. In other parts there was a total arrest in the organization and further development of these deposits of coagulable lymph, from the non-establishment of a distinct and separate circulation of the vivifying fluid. The vitality of these fibrinous deposits being no longer maintained, the attraction of the lymph-globules for each other ceased; their cohesion could no longer be sustained: disruption of the concrete masses, and a final resolution into their primitive globules, ensued, which, from their change of colour, from their appearance, and from their chemical properties, have been termed pus-globules or purulent matter. From the combined action of these pus-globules, from the eroding, destructive influence they exercise upon the surrounding tissues, and, principally, from a deficiency in the vitality of the middle tunic itself, a disorganization of the individual coats of the vessel, such as has been described, progresses in some with extreme rapidity, in others with comparative slowness.

Having adverted to the first and

third division of our arrangement, it remains for us to glance at the second, and consider how far the aneurismal diathesis which prevailed in this patient was capable of being diagnosed. I must premise that the data upon which the diagnosis of every case of thoracic aneurism ought to be based, should be derived from the symptoms and physical signs furnished by the organs of circulation, those by the venous and arterial systems in particular; from the symptoms and physical signs furnished by the organs of respiration; and lastly, from the symptoms, afforded by the glandular and nervous systems, in connection with the previous history.

In the case of true circumscribed consecutive aneurism of the ventricular parietes already recorded, we were prevented from asserting in positive terms the practicability of its being diagnosed, in consequence of its complication with a permanently patulous condition of the auriculo-ventricular apertures. In the present instance we labour under a similar disadvantage: the probable regurgitation of the arterial column of blood being chiefly instrumental in the production of the physical signs reported, more in consequence of the disproportion existing between the calibre of the artery and that of the ventriculo-aortic aperture, than from the disorganized state of the valvular structures, which were comparatively exempt from disease. To the observations appended to the former case no important addition can be made; for the particulars of which the reader is referred to the 40th number of the *MED. GAZETTE*, N. S. 1840-41.

The cavity of the face and upper extremities, which formed a prominent feature in this patient, seems attributable to a partial obstruction in the return of the column of venous blood: this obstruction may have been caused by the displaced and partially compressed lung, by the liquid effusion into the pleural cavity, but more especially by the dilatation of the ascending and transverse portions of the aorta: the extreme turgescence of the venous system, the consequent lividity of the face and superior extremities, their persistence and increase with the advance of the disease, have proved on many occasions most valuable auxiliaries in enabling the writer to suspect the in-

ipient and diagnose the more advanced stages of aortic aneurism. It is a matter of the highest importance that particular emphasis be laid on the signs furnished by the venous system, when we reflect upon the proximity existing between it and the arterial system, the almost certainty of its exhibiting at an early period of the disease those visible alterations, the effects of pressure, exercised by lesions in the coats of the arterial trunks.

To exemplify its importance, we need only refer to those pathological specimens of lesions of the arterial tube, in which adhesion has taken place between the cellular coats of these vessels; and observe the thickened, hypertrophied condition of the venous tunics, the exudation of plastic lymph on its internal surface of recent or chronic date, the partial or complete agglutination of the opposed sides, the perfect or imperfect obliteration of the venous trunk, or intersection of its cavity, from the formation of a fibrinous diaphragm, or transverse fibrous bands, dividing it into two or more distinct compartments, through which, as through constricted channels, the blood flows slowly, and with difficulty regains the right cavities of the heart: all these pathological changes may be traced to the irritation and inflammation excited in the vein from its connection with the aneurismal pouch, which, in the process of time, from its increase in size and attenuation of its parietes, may terminate by a sudden rent, and establish a free communication between these two vessels, and an intimate commingling of the advancing arterial and returning venous column of blood.

Next in importance may be mentioned the signs furnished by the organs of respiration and deglutition, as also the symptoms proceeding from pressure on the nervous system; and an overstretched condition of the minute terminating and anastomosing filaments of the cardiac and pulmonary nerves. In this patient's case, however, the thoracic complication rendered of less value those symptoms and signs, which, in others, have proved most valuable auxiliaries in enabling us to form a diagnosis.

From the extent of the cardiac dullness; the prolonged, laboured, and diffused impulses; the presence of a

thrilling, twanging vibration; the bounding, jerking, vibrating pulsations of the arteries, of large and small calibre; from the rushing, whizzing murmur, synchronous with the pulse, the ventricular contraction, and the propulsion of the column of blood into the vessels, constituting the arterial first sound; from the immediate replacement of this by a retroceding gentle-blowing murmur, rendering obscure the clear, sharp, well-defined clack, characteristic of the arterial second sound; from the persistence and regular succession of these auscultatory signs, in connection with the previous history and existing symptoms, it was conjectured that regurgitation of the arterial column of blood, after its propulsion, took place into the ventricle, through an aperture partially, but permanently patulous, not so much from disorganization of the valvular structures, as from a morbidly dilated and diseased condition of the coats of the ascending and transverse divisions of the arch.

In connection with the subject of aneurism, the following case may be adduced as illustrative of the symptoms and physical signs attendant upon the more advanced form of sacculated aneurism of the abdominal aorta.

CASE. — Aneurism of the abdominal aorta, terminating by a transverse fissure in the coats of the sac, and extravasation of blood between the layers of the transverse meso-colon—the pulsating abdominal tumor accompanied by a vibratory thrill, and intense whizzing murmur, &c.

Richard Sullivan, a private in the 10th Foot, 45 years of age, of strong muscular frame, admitted into the General Military Hospital, Phoenix Park, Feb. 28, 1842, with a violently pulsating tumor situated in the superior division of the abdominal cavity. The surface of the abdomen, when viewed horizontally, presents a prominent fullness, well defined, circumscribed in extent, and possessing a distinct throbbing, pulsating appearance: this fullness is dependent upon a large-sized globular tumor, occupying the space between the xiphoid cartilage and the umbilicus, and extending into the right and left hypochondriac regions, which, when grasped, is found to be slightly moveable, almost fixed, but expanding

equally, with extremely violent, energetic force, so that, at each impulse, the hands are repelled by an irresistible vigour, and carried beyond the limits of the epigastric and umbilical regions.

In this tumor are two distinct actions, the expansive, or diastolic; the contractile, or systolic; each accompanied by vigorous purring, thrilling vibrations, uniform in their intensity, regular in their succession, constant in their presence, but more prolonged as to duration in the former than in the latter. Over whatever part of the tumor the stethoscope is placed, the head of the auscultator is elevated with a degree of force quite disagreeable; directly upwards, if applied to its summit; outwards, and with an oscillatory motion, if applied to its sides; downwards, and with a marked degree of resiliency, if applied to its base. Each diastolic pulsation of this globular tumor is preceded and accompanied by an extremely loud and vigorous "thrumming buzz," or whizzing murmur; its duration coincides with the rush of blood through the abdominal aorta into the aneurismal sac, is synchronous with the first sound of the heart in the cardiac region, and pulse felt in the large arteries, but more prolonged than either. This, which may be denominated the first sound, is succeeded by another, dull, and undefined in character, which, though synchronous with the heart's second sound, possesses not the sharp, short, clacking character so peculiar to it. This buzzing murmur can be detected by the ear, without the aid of a stethoscope, and is present in the arterial divisions below the umbilicus, but comparatively feeble and indistinct. In the iliac and femoral arteries there exists no discrepancy in the strength of their pulsations; the normal sounds of the thoracic and abdominal aorta can be traced along the spine, stronger in the former than the latter, but free from the bellows murmur so distinct anteriorly; it cannot be pronounced to exist, even at the point where the aneurism is supposed to take its origin. Pressure on the 10th, 11th, and 12th dorsal vertebræ occasions severe pain; but no prominence of the spinal column is visible. The physical signs anteriorly undergo no alteration by this change of position. Heart's action strong, not violent; sounds preserve

that proportionate degree of clearness observable in health.

History.—His occupation as shoemaker in the regiment, and consequently the constant pressure applied to the epigastric region, are considered by him the chief causes in producing the present disease. In the month of November, he distinctly recollects being seized with a violent excruciating pain in the "pit of the stomach," whilst stooping over his work; and from this period he has been frequently troubled with cramps and colicky pains. At Christmas he obtained furlough to visit his friends in the south of Ireland, but was not at the time aware of a pulsating tumor in the abdomen. His attention was first directed to it six weeks since, from the constant throbbing pains, slight beatings, and flutterings, he experienced at the stomach. The increase in the size of the tumor has been extremely rapid within the last three weeks, and the amount of his sufferings proportionally augmented. The bowels have been constipated from the commencement; obstinately so of late, requiring injections and strong purgative medicines to evacuate them. The colicky pains and cramps, always worse during the constipated state of his bowels, are of that torturing nature, that during a paroxysm he writhes in the bed, and screams aloud. The sensation he experiences is, in his descriptive language, that of his bowels being coiled, twisted, knotted, and rolled together into a mass. These pains are felt in the loins, along the vertebral column, and every part of the abdomen. The pulse is full, and not accelerated; tongue moist; appetite good; no thirst.

On the 11th March he sat up in bed, gave a violent scream, exclaimed he was about to die, and in less than three minutes he expired. Some relief was afforded by the administration of injections and opiates since his admission.

Autopsy, twenty hours after death.—The surface of the body is blanched; countenance not distorted; muscles extremely rigid. The circumscribed prominent tumor described during life is no longer apparent. After throwing down the flap of abdominal muscles, a large dark-coloured coagulum was exposed, occupying two-thirds of the abdominal cavity, extending across the

epigastric and umbilical regions into the right and left lumbar. This coagulum was contained in a perfect serous envelope, so that on its anterior and posterior surfaces it presented the glistening polished appearance peculiar to serous membranes. In a more advanced stage of the dissection, it was discovered that the rent in the sac had occurred opposite to the division of the transverse meso-colon, into the superior or ascending, and inferior or descending, layers; the blood being poured into the cavity of this process of the peritoneum, escaped extravasation into the cellular tissue, and the consequent dissection of the several organs in the vicinity of the aneurism. In front of the aneurismal sac lay the stomach, the transverse arch of the colon, the pancreas, a portion of the spleen; and firmly adherent to the middle and inferior divisions, were portions of the jejunum and ileum intestines, the separation of which required the use of the scalpel. The semilunar ganglions, and the plexuses of nerves in the vicinity of the sac, were to a certain extent compressed during the dilatation of the sac. The origin of the aneurism was traced by slitting open the aorta at its posterior part, and was observed to commence from the front of the artery, immediately after its passage between the crura of the diaphragm. The aperture leading into the sac may be described as an oval-shaped longitudinal slit, measuring one inch in its vertical diameter, and from three to four lines in its transverse. The edges are rounded, smooth, glistening, and rigid; slightly puckered at the corners. The lining membrane of the artery is evidently continued through the aperture into the sac, and is perfectly free from a breach of continuity of surface.

The aneurismal pouch is capable of containing a large-sized orange, or globular body, from two to three inches in diameter, and is partially filled with fibrinous coagula, mixed with fluid and recently coagulated blood, collected in the inferior depending portion. The internal surface of the sac presents different shades of redness, with a rough uneven appearance, produced by the greater or less accumulation of fibrine coating the interior; which, when removed by the scalpel or nail, exposes the smooth, polished, glistening mem-

brane, continued from the artery into the sac. The coats of this aneurismal pouch present various degrees of density, their thickness being more apparent at the base than apex of the tumor, whilst an extreme degree of attenuation prevails at the inferior part, where the transverse rent has occurred. When first seen, it was blocked up by a portion of the fibrinous coagulum already alluded to. The density of the external cellular coat in this case was considerable. From the anterior and lateral aspects of the sac, the chief branches of the abdominal aorta, for the supply of the viscera, were given off. The cœliac axis, superior mesenteric, and renal arteries, sprung from the sac. The calibre of some of these vessels was dilated, and their coats thickened, indurated, and discoloured. The iliac arteries were healthy, as were also the various viscera in the abdomen.

The cavities of the heart were exhausted of blood, and firmly contracted. On the anterior aspect of the left ventricle a circular white spot was noticed, the pericardium being more dense, and partially corrugated. No disease prevailed in the valvular system. The internal surface of the aorta presented detached patches of redness, and loss of the polished shining appearance so apparent in the healthy vessel; its coats, also, were somewhat increased in thickness; its elasticity was retained.

Some engorgement of the posterior parts of the lungs, with adhesion of the pleuræ.

There are few diseases to which the human frame is subject more difficult of diagnosis, more involved in obscurity, than the incipient stage of abdominal aneurism; few in which, by the process of remotion, by a system of exclusion, and with the valuable aid of the stethoscope, we fail in arriving at a degree of certainty in our diagnosis except in this: but when we reflect on the extent of the abdominal cavity; the number of solid viscera contained therein; the deep-seated situation of this vessel; the variety of vessels, nerves, solid and hollow viscera, interposed between it and the surface of the integuments; from the liability of disease of one organ simulating, in its symptoms and physical signs, those of another, we must confess that the most skilful practitioners, the most experienced

stethoscopists, of the British, Irish, and Continental schools of medicine, have been, and will be, baffled in their diagnosis of this disease.

Can we, in the history and symptoms of the case, discover aught by which the diagnosis between incipient aneurism of the abdominal aorta, and acute or chronic affection of the viscera, may be facilitated? Can we, by an examination of the abdomen, detect any prominent tumor, isolate any particular organ, which may be fixed upon as the seat of disease? Can we not, in fine, by the aid of auscultation, point out a series of physical signs, peculiarly characteristic of lesions of the arterial tube in their early stage? Frequently not. In the present state of our information on this subject our reply must be in the negative.

In a paper published on this subject in the fourteenth volume of the *Dublin Journal of Medical Science*, Dr. Corrigan has directed the attention of the profession to a mode of detecting this disease in its early stage, by substituting the horizontal for the erect position, with the intent to remove the hydrostatic pressure of the arterial column of blood on the parietes of the sac, and so render distinct, physical signs previously inaudible. This suggestion of Dr. Corrigan has been adopted in several patients; in some attended with the happiest results, in others failing in an unaccountable manner—the presumptive evidence of the existence of an aneurism being as cogent in the latter as in the former: in such persons, as well as in those subjected to the experiment by Dr. Corrigan, there has been detected, after the free evacuation of the bowels, a circumscribed globular pulsating tumor, of greater or less size, generally situated in the epigastric and umbilical regions, with a slight lateral inclination.

Closely allied to this subject is one which embraces the consideration of the double arterial sound, audible in aneurismal lesions of these vessels, as an additional means in enabling us to detect the incipient stage of this disease: but previous to our commenting on the valuable aid afforded by this physical sign in the abnormal, we ought, for many reasons, to refer first to the physical signs furnished in the normal conditions of the arterial tubes.

Every person conversant with the

use of the stethoscope can convince himself of the presence of two distinct, separate, well-defined sounds in the arteries of large and small calibre, the individual recognition of which is much facilitated by an examination of the thoracic and abdominal aorta, from the greater degree of perfection in which they exist, and their true character being more readily ascertained. Of these, the one, which constitutes the first sound, imparts to the mind the idea of being comparatively dull and prolonged; synchronous with the first sound of the heart, and varying slightly in its character, according to the rapidity of the circulation. This sound has been considered to originate in the propulsion of the arterial column of blood from the ventricle, which, in its transit, impinges on the parietes of the arterial vessels.

Subsequent to this, a clear, sharp, abrupt, well-defined clack, constituting the second sound, is distinctly audible, proportionably loud over those vessels possessing the largest calibre, and accurately corresponding in character with that heard in the cardiac region, near the base of the heart, and hitherto considered as valvular in its nature; the validity of which theory I purpose to investigate anew, and subject to the analytical tests of pathological anatomy.

That a perfect knowledge of these facts is of the highest practical import may be illustrated by our reverting to the subject of incipient aneurism of the abdominal aorta.

A case is presented for our inspection wherein the symptoms are of that description as to excite our suspicions, and from negative evidence we are satisfied that disease of the viscera does not exist. If, in our manual and stethoscopic examinations, we notice an unusual degree of strength in the pulsations of the aorta, unaccompanied by abnormal murmurs, and unaffected by change of position;—if, in the course of the artery, we observe a circumscribed space, over which the normal sounds of the artery are preternaturally clear, unusually well defined—the first sound abnormally prolonged—the second sound clearer, sharper, and more distinct than in any other portion of the arterial tube;—if the pulsations and physical signs remain stationary, or become daily more developed, and the symptoms persist, despite our

treatment, but cannot be traced to an acute, subacute, or chronic affection of the viscera;—under these circumstances we are justified in inferring that a lesion of the arterial tunics exists, and an aneurismal pouch, in its incipient or rudimentary stage, has been formed, and is in progress of enlargement. In the more advanced forms, phenomena become apparent, and physical signs developed, which render unequivocal the diagnosis of this disease.

The principles to which I am anxious to direct attention, and, if possible, establish, may be more fully exemplified by a reference to the condition of the thoracic aorta,—aneurismal lesions, in their incipient stage, being involved in extreme obscurity, and liable to be mistaken for, or confounded with, other diseases, to which they bear not the slightest affinity. Thus, in two or three patients, who had been under treatment for several weeks, and were pronounced to be suffering from rheumatic pains in the neck and upper extremities, with anomalous symptoms connected with a morbid state of the pulmonary tissue, I have been induced to declare in favour of their originating in an aneurismal lesion of some portion of the arch of the aorta, in consequence of the following note being confirmed by daily examination:—"In the second intercostal space of the right side, about half an inch external to the sternum, is a clear, sharp, abrupt, unusually well-defined clack, not preceded by a whizzing murmur, but by a slight prolongation of the arterial first sound, which deviates not from the character of the normal sound except in its duration. In removing the stethoscope from this circumscribed space, the distinctness of these sounds gradually declines, so that they can scarcely be heard to the left of the sternum. In the cardiac region, the heart's action and sounds do not vary from those of a healthy organ, the frequency of the pulse ranging between 80 and 86. The second sound heard within the limits of the cardiac region, and at the base of the heart, possesses not that clear, sharp, abrupt clack, so obvious in the intercostal space. As soon as the circulation has become accelerated by their walking quickly through the wards, the arterial action increases in energy; the physical signs

are more extensively heard, but the relative proportion between the duration of the two sounds previously observed becomes less defined. In this stage of the disease there are no impulses communicated to the touch,—there are no phenomena,—no physical signs furnished by the venous circulation, none by the organs of respiration, none by those of deglutition;—all of which, in the subsequent, progressive, and more advanced stages, by contributing their respective quota, render the diagnosis of aneurismal lesions of the aorta practicable in the moderate enlargement of the sac, and prior to the formation of a pulsating tumor externally. That this appreciable alteration in the normal arterial sounds, unaccompanied by abnormal murmurs, did aid materially in enabling us to form a diagnosis, and were not imaginary on our part, nor they deceptive in their indications, was proved by the subsequent manifestation of symptoms, phenomena, and physical signs, which rendered unequivocal the existence of an aneurismal lesion of the aorta.

In the progressive dilatation of the aneurismal sac, the relative proportion previously observed to be maintained between the duration of the first and the predominating sharp abrupt clack of the second sound is in a great degree annulled, the first, assuming a duller, more prolonged character,—which change, in accordance with the views already stated, may be explained by the propulsion of a larger volume of blood into the interior of the sac, and the contact of its particles with a greater extent of surface; in some cases exempt from abnormal vibrations, in others presenting a variety of intonations, from the finest shade of the bellows-sound to the most intense description of the whizzing, buzzing, thrumming murmur. The corresponding alterations in the character of the aneurismal second sound proceed, *pari passu*, with the pathological changes in the structures of the arterial tunics, the middle coat in particular, and consist in a diminution of the clearness, sharpness, abruptness, of its characteristic clack; its distinctive vibrations, hitherto so obvious, becoming less defined; its occurrence and duration with the systolic action of the sac being more prolonged, in proportion as the density of the aneurismal sac in-

creases, as the hypertrophy of the fibres of the middle coat becomes more developed, and as the accumulation of a fibrinous deposit on the inner surface of the sac forms the successive layers of the coagulum.

These facts, and the observations hitherto recorded, tend to establish the theory, that the second sound is essentially arterial,—mainly dependent upon and principally produced by the action. The contractile power inherent in the middle tunie of the arteries of large calibre,—the semilunar valves bearing the same relation to the second sound as the auriculo-ventricular valves do to the first, viz. their structures remaining free from disease, they render it more perfect; by being diseased, they are instrumental in the production of murmurs which obscure or replace the normal arterial sounds; but complete disorganization of their structures may exist without any appreciable alteration in the character of the second sound, if the coats of the arteries suffer not from the pathological lesions described.

If this theory prove to be correct, and if it maintain its position after a scrutinizing investigation into its pretensions, it must refute and render invalid the adopted theory of the day, which pronounces the second sound to be valvular, produced by the reaction of the arterial columns of blood tightening the semilunar valves at the ventricular diastole.

PURPURA HÆMORRHAGICA.

To the Editor of the Medical Gazette.

SIR,

SHOULD the following case of purpura hæmorrhagica be considered of sufficient interest to merit a place in your valuable journal, an early insertion will much oblige,

Your obedient servant,

THOMAS STAINTHORPE,

Member of the Royal College of Surgeons,
London, and Licentiate of Apothecaries'
Hall.

Hexham, Northumberland,
Oct. 6, 1842.

William Hedley, ætat. four years, a healthy-looking, stout boy. Has enjoyed generally good health; was observed for some days to be dull, listless, and thirsty, with flushings and rigors.

On the 14th of August I was first called, and found him with some dark spots on his tongue, inside of cheeks, lips, and a few over the body. The bowels being constipated, I gave calomel and a saline aperient, which had to be repeated.

15th.—Skin almost covered with petechiæ, varying from bright red to purple colour: the largest nearly a quarter of an inch in diameter; tongue, gums, and fauces, same as yesterday; the spots not nearly so numerous as on the surface of body, but larger; has expectorated blood different times during the day; pulse 112, small; heart's action strong; tongue covered with a yellowish fur; skin hot; breathing quick; appetite very moderate; great thirst; a spot on conjunctiva of left eye. Ordered—

Balneum Tepid. maneque nocte.

℞ Acid. Sulph. Delut. ʒj.; Aq. Distill.
ʒvij. M. ft. capt. coch. j. parv. ter
die ex aq.

16th.—Petechiæ are of different shades; spot on conjunctiva larger, and discharging thin pale blood; pulse 116, small and quick; skin hot; urine scanty and muddy; passed some blood by stool; tongue less loaded. Ordered to wear a shade to exclude the light from the eye, and bathe it occasionally with tepid milk and water.

Cont. Alia.

17th.—Petechiæ going through the varied shades of red, purple, and yellowish colour; conjunctiva the same; pulse 120, fuller; tongue furred with white; bowels not open to-day; passed a pint of bloody urine, with pain in voiding; expectorated blood different times since yesterday; thin blood is discharged from the right nostril; no appetite.

Cont. Baln. Tepid.

℞ Hydr. Submur. gr. iij.; Pulv. Jalap.
gr. iv. ft. Pulv. Aper. statim sumendus.

℞ Acet. Plumb. gr. iij. ft. Pulv. Mitte
j. capt. unas post Pulv. Aper. h. s. et
alter. mane.

18th.—Petechiæ much the same as yesterday; a pint and a half of bloody urine; bowels open from the purgative; vomited the powders; skin pale and clammy; pulse 124, small and irregular; discharge from conjunctiva sanguino-purulent; hæmorrhage from nostril same as yesterday; very restless. The bath to be discontinued.

R Acet. Plumbi, gr. iij.; Pulv. Opil,
gr. $\frac{1}{2}$. ft. Pulv. mitte no. vj. cap. j.
3tia q. q. horâ. Vin. Rubri. Coch.
Parv. omni horâ.

19th.—No fresh petechiæ discoverable to-day; twenty ounces of bloody urine; bowels free; pulse 130, very irregular; other symptoms much the same, but appears to be sinking.

Rep. Vin. et Pulv.

20th.—Passed a better night; urine increased in quantity, with less proportion of blood; pulse a little steadier; no bleeding from the nostril.

Cont. omnia.

24th.—Has improved daily since last date under the wine and acetate of lead. Many of the spots have disappeared; what remain are diffused, of a purple and yellowish colour; urine contains a little blood; conjunctival discharge more purulent; pulse 116, soft and regular; lips and tongue pale and exsanguine; bowels open from an aperient yesterday.

Cont. Vin.; Rep. Pulv. cap. j. bis in die.

30th.—The symptoms have gradually improved since last date; urine quite clear; complains of debility; appetite improving.

Sept. 7th.—Quite well, but continues weak.

30th.—Enjoying his ordinary health.

REMARKS.—At my first visit the case was well marked, and not to be mistaken. The treatment, however, had no beneficial effect until the acetate of lead was combined with opium. The lead would not remain on the stomach by itself. On the 17th I was inclined to bleed from the arm; but the pulse, although fuller, did not indicate such treatment, nor was the heart's action at all strong (as we sometimes find the pulse may be small or weak, yet the heart's action strong and firm). The bath was discontinued, because the surface remained purple after it was taken on the morning of the 18th. There was slight tenderness on pressure over the right kidney, while the urine was mixed with blood. Perhaps it might have been better to prescribe the acetate of lead and opium at an earlier stage of the disease, which I would do were I to meet with another case of purpura.

CASE OF ALBUMINOUS URINE.

To the Editor of the Medical Gazette.

SIR,

As, in the examination of albuminous urine, the following circumstances had never been previously observed by me, and as similar might mislead a person unaware of them, the following practical hints as to the quantity of acid used may be worthy your notice.

Finding, on heating in a tube with a few drops of dilute nitric acid, some highly albuminous urine, that became a solid mass when heated by itself, and from which was thrown down a most abundant precipitate on addition of undiluted nitric acid, that it did not coagulate, but became only gelatinous, I was induced to examine the matter more attentively.

If to two fluid drachms of this urine a drop or two of dilute nitric acid be added, a light flocculent precipitate falls, which is entirely dissolved on shaking, and by heat the fluid coagulates; but if six or eight drops be added, the precipitate is likewise dissolved, while the fluid remains perfectly clear on boiling. By addition, however, of sufficient ammonia to neutralize the acid, coagulation occurs, though not as perfectly as if the urine had been heated alone. A larger quantity of the dilute acid causes the entire and permanent precipitation of the albumen.

Almost similar are the results of the admixture of dilute nitric acid with ovalbumen and healthy urine or water; also with the serum of the blood and healthy urine. On boiling some drops of acid with ovalbumen and water, an uniform opalescent jelly is formed, but no coagulation takes place. The action of the acid on a mixture of one-third serum and two-thirds healthy urine is precisely similar to that on albuminous urine, proving the source, and almost the simply physical transudation, of the extraneous matter.

The dilute acetic and oxalic acids do not impair the coagulability of the liquid, while neither the muriatic nor sulphuric acids precipitate the albumen when the fluid is cold; whereas, on boiling it with the former, an opalescent uniform jelly results, and with the latter acid the coagulation is not prevented.

If this crude notice of the varying action of the acids on albuminous fluids is worthy attention, the insertion in your journal will oblige, sir,

Your obedient servant,
JOHN S. BARTRUM.

Gay Street, Bath,
Oct. 7th, 1842.

OBSERVATIONS ON THE TREATMENT OF FRACTURES.

To the Editor of the Medical Gazette.

SIR,

IT IS NOW eight years (*vide* MEDICAL GAZETTE, vol. xiv. p. 670) since I first advocated the necessity of attending to the keeping up the action and temperature of the cutaneous structure in inflammation, laceration, or contusion of the cartilaginous, ligamentous, tendinous, fibrous, and muscular structures of the body, and since I also denounced in those affections the application of cold, and the diminution of power by means of local bleeding near the injured part. Experience has fully attested the many advantages of hot stimulating applications; they have a decided preference in lessening the sufferings of the patient; while, on the other hand, much time is gained in restoring the reparative action of the parts, notwithstanding that tumefaction, redness, and swelling of the cutaneous and subcutaneous structures generally proceed with great activity during the first four days, then gradually subside about the seventh or eighth day, leaving the deep-seated structures comparatively free from pain either on motion or pressure; and the truth of this will appear evident on reflection of the well-known Hunterian law, that no two inflammations can exist with equal force in the same system; the one will mitigate the other. Next, we must consider the lowly organized state of these structures, which are only balanced or supported in their normal action or temperature by the power of the exhalent vessels of the skin. Did these lower structures but contain one drachm of blood more than in their normal condition, the result would be inflammation, which would require three months at least to effect a termination by resolution. It is a fact, that excitement of the arteries in the vicinity of an injury

assists much in the restoration of a sanative action. Only diminish the power of the arteries and exhalents below the natural standard in such injuries, and you deprive the limb of the means of repairing the mischief, and too frequently bring on phlegmonous inflammation or sphacelus.

By this statement I do not mean to condemn the necessity of general depletion when the pulse is quick and hard; but I feel bold in asserting, that local bleeding by leeches, with the application of cold lotions, prevents the well-doing of such cases. The sole use, and a great one, of the diffusible stimuli, is in great weakness, where they are only required to support the system, while it cannot be supported by the ordinary durable stimuli; and after the excitement is so far restored that the ordinary supports are now sufficient to lay aside the extraordinary, the continuance of which would be hurtful, and to manage the convalescent and restored state of health by the powers employed in health. When the diffusible are continued longer, they are equally hurtful, and a cause of disease, as they are serviceable when disease requires their support; analogous to wine, they bring about the system, in a weakened state, so as to be sustained by its natural and ordinary supports; but analogous to it in another respect, when the strength of the system requires not their additional stimulus, they carry it up into indirect debility.

We must bear in mind the remarkable lowness of vitality in these structures. A cut or laceration of the tendinous or fibrous structures is attended with far less serious consequences than a false position that distends them. The natural temperature of the cartilaginous and tendinous parts is very low; for in general the degree of heat in an organ is proportionate to the quantity of blood-vessels it receives. If the erroneous systems of surgery that have appeared in the world could be reduced to any general point of agreement, it would be that there is not a mode of evacuation, or of impoverishing the several parts of the vascular system of their respective fluids, that the brains of practitioners have not been tortured to contrive and employ, forgetting that life is a forced state, that animals every instant of time tend

to death. A Roman poet has somewhere said—

“Wine, warmth, and love, our vigour drain;
Yet wine, warmth, love, our life sustain.”

We are apt to mistake the seat of pain, believing it to be in the lower structures, when in truth it has its seat in the cutaneous structure. The following case will afford some demonstration of the principles I have endeavoured to establish:—

— Meek, aged 45 years, fell from off a scaffold twenty-five feet in height, and received a fracture of the left temporal bone, and a compound comminuted fracture of the tibia and fibula, one-third from the knee-joint, about two inches below the insertion of the ligamentum patellæ. The nature of the fracture of the leg, with the injury to the surrounding parts, would have induced me to suggest amputation, had not the cerebral symptoms manifested a fatal tendency, viz. insensibility, with arterial bleeding from the left ear. The upper end of the fractured tibia was split and splintered at least one inch and a half. Having removed the rough fragments, I reduced the fracture, and placed it in one of my suspension apparatus, as described in the twelfth volume of the *MEDICAL GAZETTE*. After general depletion and counter-irritation, the cerebral symptoms gradually resumed a healthy state, about the third week from the time of the accident. Until the eighth day the leg appeared to be progressing rapidly, the ends remaining in apposition; but whether owing to the sacking of the bed giving way, or want of outer support to the thigh, the broken end of the upper part of the tibia projected, and sphacelus round the wound commenced. Despite of adjustment the end still protruded, as if from spasm. I again took off a large portion of the bone, and placed the leg in the straight position, with a long outer splint extending half way up the thigh, which had the effect of readjustment of the fracture. I then applied a hot poultice to the wound, which was continued until it healed; ordered a stimulating diet, with meat, &c.

The union by bone took place at the end of the seventh week, at which time the case was seen by two medical friends who happened to be at Cray-

ford, viz. Mr. Tuckett, of the Dreadnought Hospital Ship, and Mr. Alinson, of Woolwich, who were not a little surprised to see the bone consolidated. The case is an example of the benefit of country air and good diet in cases of compound fracture. At the end of the tenth week the patient was removed home, a distance of two miles: and here I observe, the immense difficulty of restoring the lost muscular action. He has now been more than seven weeks endeavouring, by the use of friction and action, to regain the use of the limb. Although he can now support the weight of his body on the leg, yet he is unable to walk without the assistance of a crutch and stick. I have frequently had my patients, who have had the thigh fractured, walking without support at the end of the eighth week. When the muscles have been kept so long on the stretch, or passive state, there is much difficulty in persuading the patient to use all his energies in obtaining a restorative action of the muscles.

I do not like to make any assertion without proof; but I cannot help thinking (and it is my intention to reduce it to practice when the next opportunity occurs) that galvanism applied moderately, and with the foot or hand immersed in hot water, would be highly beneficial in regaining the use of the suspended power of a limb. I beg leave to state my objection to the straight position in treatment of fractures of the thigh and leg. From the commencement of my surgical life I have been in the habit of placing fractured limbs in such a position, that the fewest muscles are rendered tense. In fractures of the thigh, notwithstanding the apparent simplicity and adaptability of Desault's splint, I am practically convinced that the patient who is treated in such a manner loses much time during the convalescent stage. The bone may unite; the limb may be rendered straight by its application; but, on a fair comparison with a proper double-inclined plane rightly adjusted, the patient will suffer far less pain in getting the limb accommodated to that passive form than by the extended position. Two things, therefore, are gained, a shorter duration of pain, and many weeks of time in the restoration of the muscular

action during the convalescent stage of a fracture.—I am, sir,

Your obedient servant,

JOHN GRANTHAM.

Crayford, Kent,
Oct 6, 1842.

P.S.—The splint that I use in fractures of the upper third of the tibia extends from the outer malleolus to the upper third of the os femoris, having a hinge-joint opposite the outer condyle of the os femoris. J. G.

ANALYSES AND NOTICES OF BOOKS.

“L'Auteur se tue à allonger ce que le lecteur se tue à abréger.”—D'ALEMBERT.

Methodus Medendi; or, the Description and Treatment of the Principal Diseases incident to the Human Frame. By HENRY McCORMAC, M.D. Consulting Physician to the Belfast Hospital, and Professor of the Theory and Practice of Medicine to the Royal Belfast Institution. London: Longman, Brown, and Co. 1842.

A VERY great mass of information is contained in this volume—in fact, a whole system of medicine; but it is rather too much condensed—too much concentrated, to be very easy of digestion. The chapters have no headings, except of the very briefest kind, such as “Fever—Typhus,” and the index is little more than a list of diseases. These circumstances render the information it contains less accessible than is desirable; but still the matter is there, and in great abundance, if the reader have time and industry to seek it out. From this account it will be perceived that the work is better suited for the advanced student than the beginner, and to the former we earnestly recommend it, as he will find the facts which have been made out, and the opinions which are recorded, by almost every writer on the different branches of medicine whose sentiments are in any degree worth knowing. The nature of the work admits only of an opinion, and a specimen being given: above, we have expressed the former, and we subjoin the latter.

“Lesions after death are not constant: I have often not discovered any, or any adequate to the production of

death. Of those dying of what are termed essential fevers, observes Andral, the small, and, more frequently, the large intestines, are exempt from every change. Louis, Delmas, Cayol, Martinet, and Bouillaud, all record fatal instances without any local affection. The mucous membrane of the small intestines, writes Louis, in one instance, likewise the elliptic plates of the ileum, were free from all traces of alteration. Bouillaud and Chomel, and others, aver that the digestive tube was perfectly healthy; and Alison, Neumann, Gerhard, and Lombard, make similar admissions. Marks of gastric disease are far less frequent than the affirmations of Broussais, Bouisseau, Roche, Stokes, and others, would imply. Commonly there is no departure from the healthy state; sometimes, there is slight discoloration, occasionally softening and ulceration of the inner surface; alterations, however, not confined to fever, and very equivocal indications of inflammation. Softening, in particular, would seem merely a cadaveric change, and was often detected by Andral without the least evidence during life of its existence. In the twenty-first case of Chomel's Clinique, all three coats of the stomach were ready to slough out; and a pupil having placed his finger on the black spot, an aperture, through which fluid passed, quickly ensued. In four instances by Louis, the ulcers did not penetrate the mucous coat, and were from two to three lines in diameter. Alterations, not follicular, of the large and small intestines, are not numerous. A reddish tinge, confined to the mucous membrane, or extending to the three coats, is occasionally visible, even through the peritoneum; Chomel speaks of sanguineous infiltration with thickening, from a few inches, to as many feet, confined to the mucous coat. The hue varies from a rose colour to a reddish black, and fluid may be expressed by the handle of the scalpel. Blood, however, may be exhaled apart from ulceration or erosion. Softening and discoloration are not confined to the vicinity of the altered plates.

“The abnormal development of the mucous follicles of Peyer and Brunner, along with enlargement, induration, or softening of the corresponding mesenteric glands, are frequent occurrences in fever. These glands have been

seen large as a pigeon's egg, perhaps soft and tending to suppuration, of a red, violet, or blackish aspect. Louis found one near the cœcum, which had undergone purulent conversion by the forty-ninth day; and the parietes were so thin, that rupture and effusion, had the patient lived, could not have been remote. The glands contiguous to the altered plates are those principally affected. Sarcone, Rœderer, and Wagler, Prost, Broussais, Petit, and Serres, Andral, Bretonneau, and Louis, describe the alterations here adverted to, while they are pourtrayed in the plates of Baillie, Cruveilhier, Carswell, Hope, and Bright. The plates or agglomerated follicles of Peyer, when affected with disease, are of an oval form, often apparent through the coats of the intestines. The term dothineritis, meaning pustular enteritis, has, in such cases, been applied. The cœcum and close of the ileum, being the principal seat of the plates, are the parts mostly affected; the isolated follicles, or those of Brunner, may be similarly implicated. In colour, the eruption alternates from white to red, along with that of the adjacent mucous membrane; the consistence, also, is variable. The dimensions may be from two to three square inches or larger, till they dwindle to a single follicle. The plates are seated opposite the insertion of the mesentery, but the single follicles occupy every part indifferently. In the large intestines, the plates are smaller, whereas the follicles, those in the rectum excepted, are larger, as well as more numerous. The number of plates varies from one to twenty, but the amount of the follicles is quite uncertain. Orifices are discoverable on examination, but the several mucous crypts may be so closely blended together as not to be separately distinguishable. The muciparous glands, as they are also termed, may undergo resolution, or proceed to gangrene and ulceration. In the first case, they gradually lose their prominence, and assume their wonted healthy aspect. What the French term *plaques gangrénées*, that is to say, plates in the first stage of alteration, are the only ones which undergo resolution: in the reticulated plates, *plaques réticulées*, partial gangrene has already commenced. It has not been determined whether sloughing be a necessary precursor of ulceration,

whether the latter take place at other points besides the altered follicles, or whether it ever extend beyond them. Ulceration sets in about the tenth day, and is much less frequent in the isolated, than the agminated follicles. The sloughs involve the mucous coat, or both mucous and muscular coats, and may come away in soft fragments or debris, or single masses of a greenish yellow hue. The ulcers are oval or round, much as if punched out; often they run together, so as to involve a considerable portion of the mucous membrane. When the slough is detached, the submucous cellular tissue, or even the peritoneal coat, forms the base of the ulcer. Should complete perforation ensue, inflammation and death are the almost inevitable result. The communication, Louis informs us, rarely exceeds three lines breadth; it almost invariably occurs at the termination of the ileum. Intestinal cicatrices differ less from the surrounding mucous tissue, than those of the surface do from the skin; they even, it is said, disappear, the normal tissue being reproduced, or a kind of serous membrane or pellicle is substituted.

MEDICAL GAZETTE.

Friday, October 14, 1842.

"Licet omnibus, licet etiam mihi, dignitatem Artis Medicæ tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

HOW TO PROCURE SLEEP.

WHEN Martial drew that celebrated picture of a happy life in which he has accumulated every circumstance of ease—the estate not earned, but inherited—good health—a cheerful wife—and friends of one's own station, he did not forget the *somnus qui faciat breves tenebras*. Without sleep, the period of darkness is long indeed; or, as Madame de Sévigné expresses it, there are twelve hours in the day, and fifty in the night.

Perhaps Abernethy's receipt for curing the gout, by living on a shilling a day, and working for it, might prove

equally efficacious against watchfulness; but the remedy is far from being a popular one. Hence, in all ages, the rich and luxurious, unwilling to purchase repose by exertion, have harassed physicians with demands for sleep; and the list of prescriptions for the wakeful is endless.

Dr. Binns, who has lately published an amusing work on the subject*, thinks that medicinal narcotics were preceded by other means. "The murmur of the ocean, the warbling of birds, the voice of woman, the melody of flutes, the monotonous fall of water, the narration of fables, and the luxurious prostration of the warm-bath, were, at the earlier periods of human history, and are, even now, in the East, resorted to, to procure oblivion of existence."

However this may be, it is certain that much more powerful narcotics have been employed from very remote ages. Wine is as ancient as the Flood, and opium probably not much younger than the poppy.

Dr. Thomas Young, in the list of *Materia Medica* with which he has enriched his "Medical Literature," has divided narcotics into three classes. In the first, among narcotics of undoubted power, there are two which one is surprised to see there—musk, and the syrup of the red poppy. In the second are camphor, digitalis, wine, and rectified spirit. In the third, we find lettuce, the smoke of stramonium, *calor modicus*, and *frigus summum*. We have not the book before us, and do not recollect whether *cocculus indicus* is in either of the classes; but perhaps it may be considered as included under the head of *Porter*, which occurs in the third. Last of all, in a parenthesis

by itself, we find ("Counting 1000, or rather, 100 respirations").

This counting is in principle the same as several other methods of inducing sleep by monotony:

Fontesque lymphis obstreptant manantibus,
Sonnos quod invitet leves.

HOR. *Epod.* ii. 27.

Among the remedies for watchfulness, Darwin gives, in his *Zoonomia*, "an uniform sound, as of a pausing drop of water, or the murmur of bees*." "From the remotest ages," says Dr. Binns, "poets have celebrated the murmur of brooks, the waving of a field of corn, the ceaseless splash of ocean, the whispering of groves, the hum of bees, in short, monotonism, as incitements to repose; while the venerable Wordsworth adds, the continued passage of a flock of sheep, the passing of a herd of oxen, a flight of birds, and even the ocean, as he styles it, 'a grand monotonous idea.'"

Boerhaave, again, in a case of wakefulness, ordered water to be placed near the patient, so as to drop into a brass pan. Dr. Willich, who wrote some forty years since, knew that sleep was promoted by "gently and uniformly affecting one of the senses; for instance, by music or reading." Mr. Maenish often coaxed himself to sleep by repeating some well-known rhyme half a dozen times; and a gentleman, in the town of Milford, has learned to fall asleep at will, by fixing his eyes in one direction for a few minutes.

Dr. Elliotson knows a lady who often

* The following example might be attributed to monotony, or more correctly, as it is by Darwin, to compression of the brain:—"Another way of procuring sleep mechanically was related to me by Mr. Brindley, the famous canal engineer, who was brought up to the business of a mill-wright: he told me that he had more than once seen the experiment of a man extending himself across the large stone of a corn-mill; and that, by gradually letting the stone whirl, the man fell asleep before the stone had gained its full velocity, and he supposed would have died without pain by the continuance or increase of the motion. In this case the centrifugal motion of the head and feet must accumulate the blood in both those extremities of the body, and thus compress the brain."

* "The Anatomy of Sleep; or the art of procuring sound and refreshing slumber at will. By Edward Binns, M.D. &c."

It seems that this book was composed by a machine; we wish that the ingenious apparatus had thought of adding running titles and a table of contents.

remains awake till her husband rubs her foot; and to many persons the having their hair combed is a soporific. John Philips, the poet, delighted, when a boy, to have this office performed for hours together; and Isaac Vossius was so critically curious in combing, that he preferred its performance rhythmically. He liked to have it done by barbers or other persons skilled in prosody, so that their pectinating movements might imitate iambs, trochees, &c. to his great delight. In these cases, reverie rather than sleep was produced; but in other instances the effect is that of a simple narcotic. Thus, Sir John Rennie, the architect, was regularly put to sleep by having the hair at the back of his head combed, and rubbed with the palm of the hand. In the West Indies, persons are often lulled to sleep by fanning, which is generally performed, says Dr. Binns, with a leaf of the *Coccoloba uvifera*, or seaside grape. Here again, the monotonous waving of the fan withdraws the attention of the patient from all disturbing thoughts, and from all external objects, save itself, and thus produces that one-toned impression which is inevitably and speedily followed by sleep.

"As the immediate cause of sleep," says Dr. Darwin, "consists in the suspension of volition, it follows that whatever diminishes the general quantity of sensorial power, or derives it from the faculty of volition, will constitute a remote cause of sleep; such as fatigue from mental or muscular exertion, which diminishes the general quantity of sensorial power; or by an increase of the sensorial power, as by attending to soft music," &c. (*Zoonomia*, vol. i. sect. 20, xviii.)

When we are told to procure sleep by an effort of volition, as, for instance, by imagining that we hear the murmur of an overshadowed fountain, or see the waving of a field of corn

when ruffled by the evening breeze, the plan seems in direct contradiction to Darwin's theory that the immediate cause of sleep is the suspension of volition. But, in truth, though it might require a powerful effort of the will to withdraw the mind from its ordinary anxieties to these agreeable images, yet when it is once engaged in them, volition yields to sensation; just as it may demand much exertion to climb a garden wall, yet the labour once achieved may be rewarded by repose among flowers.

Perhaps the faculty of voluntary sleep possessed by some few men may consist in the power of instantaneously abstracting the mind from all but the most monotonous stimuli. Thus Napoleon, according to Bourrienne, fell asleep in an instant, while sitting by the side of Alexander, of Russia, and witnessing the representation of the *Cid*. Sir William Cockburn, of Bath, is likewise said to enjoy this faculty.

The removal of irritation or stimulus ranks next to monotony, or perhaps, above it, as a means of procuring sleep. Thus, the Chinese recommend us to divest the mind of all unpleasant images, a counsel which we have touched on above, as the necessary preliminary to the uniform flow of agreeable ones.

Dr. Franklin's advice to a young lady on the art of procuring pleasant dreams, is chiefly grounded on the removal of uneasy physical impressions. Chiefly, we say, for he also recommends her to have a good conscience. He discountenances hearty suppers after full dinners; speaks of the disposition of the pillow; and advises the limbs to be placed so as not to press one another inconveniently, as, for instance, the ankles; for the resulting uneasiness may come on during sleep. The whole of the letter, which bears the stamp of Franklin's distinguished

good sense, may be considered a valuable contribution to the art of going to sleep, as well as of sleeping soundly. His recommendation of having two beds, one to be used when the other grows hot, is judicious, and might be followed by many with advantage, in sultry weather.

Under this head we might mention the proposal of Dr. Beddoes. He thought it better to cause sleep by abstracting stimuli than by exhausting excitability, and accordingly proposed to place the wakeful patient in an atmosphere containing a diminished proportion of oxygen, and to let in common air when he was asleep.

Dr. Binns very properly insists on removing several sources of irritation or discomfort, as a preliminary to sleep. Thus, the body may be sponged and then rubbed with a coarse towel before retiring to rest. The friction will certainly be beneficial, but we question whether the sponging and consequent evaporation is desirable for a delicate patient in cold weather. This general recommendation of sponging in England has arisen, no doubt, from our singular neglect of bathing. But why not supply the defect?

If sleep is prevented by cold feet, put a blanket at the bottom of the bed, between the sheets; or rub the feet with a wet towel, and then put on worsted socks.

The bed-room should be large and airy, and in winter must have a fire. Dr. Binns thinks it a remnant of "barbaric ignorance" to go from a sitting-room heated to seventy or eighty degrees to a bed-room where water freezes. But, in the first place, we should call it more than a *remnant* of ignorance to heat the drawing-room to seventy or eighty of Fahrenheit: secondly, the sleeper is under more favourable circumstances for retaining caloric in bed, than on his Trafalgar

chair; and thirdly, in comfortable families, who enjoy the

Mundus victus, non deficiente cramenâ,
fires in bed-rooms are very usual.

Dr. Binns talks of savings in the doctor's and the butcher's bill, through this additional warmth; but at this end of the island the coal-merchant's account is an object of more terror to the humble middle-class-man than he imagines. We are of opinion that the *calor modicus* in another form is an excellent expedient; a warm bath, at 95° or 96°, for twenty minutes, will soothe many a watcher into sleep.

On the other hand, in very hot weather, a cold bath, and especially the agreeable fatigue produced by swimming, will be of service:—

*Ter uncti
Transnato Tiberim, somno quibus est opus alto.*
Hor. Sat. ij. l. 7.

Or the cheerful glass mentioned in the next line, in all its varied forms, from a goblet of Lafitte to an Oxford night-cap, may produce the wished-for end; but obviously is more liable to be abused than the other remedies.

"After supper walk a mile," says the old adage; and this, too, may be considered a narcotic. Several of these expedients, however, demand some little exertion on the part of the *dormituriënt*; and it is difficult to persuade easy self-indulgent people to put their own shoulders to the wheel, however urgent the occasion, or however manifest the benefit; they wish their snuffers to be not only patent, but self-acting.

An agreeable incident is given by It is in one of Mackenzie's novels, we believe, that an agreeable incident is given, which we have seen quoted somewhere as an example of sleep produced by monotony, but which we should explain differently.

The hero, having come to London, is so excited by the noise, that he is unable to sleep, until he accidentally touches his buckle, which is lying on

the table. The twanging sound produced reminds him of the voice of his aunt in the country, and volition is immediately suspended, as Darwin might have said. We should refer the effect, not to the hum elicited, which could neither have been long, nor loud, but to the power of association, which, by transporting him to his native village, freed him from the noises around, and delivered him up to the dominion of a single sensation.

Let the bad sleeper, then, endeavour to supply the place of this harmonious buckle; and instead of meditating on bad debts and the income-tax, the recent flight of his apprentice and his own incipient bronchitis, let him conjure up the farm-house in which he was born, the gayest scenery of the countries he has visited, or the still brighter pictures of the poets.

Should all these methods fail, there remains the discovery of Mr. Gardner, the "hypnologist," now published by Dr. Binns.

"Let him turn on his right side, place his head comfortably on the pillow, so that it exactly occupies the angle a line drawn from the head to the shoulders would form, and then, slightly closing his lips, take rather a full inspiration, breathing as much as he possibly can through the nostrils. This, however, is not absolutely necessary, as some persons breathe always through their mouths during sleep, and rest as sound as those who do not. Having taken a full inspiration, the lungs are then to be left to their own action—that is, the respiration is neither to be accelerated nor retarded. The attention must now be fixed upon the action in which the patient is engaged. He must depict to himself that he sees the breath passing from his nostrils in a continuous stream." The very instant he succeeds in doing this, he falls asleep!

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN

IN LONDON AND ITS VICINITY.

A HALF-YEARLY General Court of the members of this Society was held on Wednesday, the 5th instant, at the Gray's Inn Coffee-House, Holborn, for the confirmation of minutes, and the election of officers. It was presided over by Martin Ware, Esq. one of the Vice-Presidents, and was attended by Sir Charles M. Clarke, Bart., Dr. Warburton, Dr. Merriman, Mr. Stone, Mr. Ridout, and many other members.

It appeared from the Auditor's Report, that the income of the past year was £1845. 12s. 3d.; and the disbursements, £1433. 8s. 7d. The balance in the Treasurer's hands, £26. 11s. 8d.; and the sum added to the capital stock, £385. 12s.

The income arose, 1st, from life subscriptions and compositions of members, £103. 19s.; which, being in lieu of their annual subscriptions, must always be funded or added to the capital stock.

From benefactions and donations, partly annual, but principally casual, £172 17 6
2d, Annual subscriptions of members 285 12 0
3d, From dividends 1283 3 9

Available for current service of the society £1741 13 3

The disbursements were—
Grants for relief. £1285 10 0
Salaries 77 15 0
Other expenses, including those incurred during the late revision of the laws 70 3 7
£1433 8 7

The grants for relief have been distributed among 32 widows and 14 children of deceased members. Three of the orphans are adults, and have been relieved, not strictly according to the principles of the society, but on account of insanity or imbecility. The possession of £50 per annum from other sources disqualifies a widow, and £25 per annum a child, from receiving relief from the fund; but the majority possess much less than this sum. Fourteen (or nearly one-half) of the widows, and almost all the children, have no other dependence whatever. Three, otherwise unprovided for, receive £20 per annum from the Society of Apothecaries, which also makes a donation to the Society of fifteen guineas annually.

The Society for Relief of Widows and Orphans in London and its vicinity has now existed 54 years. In 1794, six years from

its foundation, and with a capital of less than £4000, the Court of Directors began to grant relief to distressed applicants. The following year £60 was voted for that purpose. Since then the capital has steadily accumulated, and the number and amount of grants has been progressively increased, until, in the year 1840, the capital amounted to £34,589 stock in the three per cents., and a small sum, less than £400, in the new 3½ per cents.

In that year too (1840) the trust for a reserved fund of £3500 new 3½ per cents., which in 1818 was set apart at compound interest for 21 years, expired, having accumulated to £7355—making the total capital £42,000, while about £28,000 had been distributed among persons eligible to receive relief.

On a minute inquiry into the financial affairs of the Society in 1840-41, arising from the question of the disposal of the accumulating fund, it became evident that notwithstanding the general prudence and wise management which had conducted these large financial proceedings with such gratifying results, the grants were then exceeding, and had of late exceeded, what could fairly be counted on as the available income of the Society, and that the due proportion, which the increasing capital had long steadily borne, and should always bear to the increasing expenditure, had been lost sight of. The timely detection of this error, by the vigilance of Dr. Burrows, a Director, soon led to its redress, and it was resolved to grant smaller sums to future applicants, and not to diminish the usual allowance to those already receiving relief, who would have felt severely any reduction of their scanty income. The two last years, therefore, have presented a decrease in the amount of grants; for although seven new applicants, five widows and two children, have been added to the list, they have been on the reduced scale of £30. per annum, while those removed by death were on the previous scale of £35 per annum.

It was early calculated that the number of applicants would gradually increase, and would reach its maximum, 70 or 80 years from the foundation of the Society. The first part of the prediction has proved true hitherto; and it is abundantly evident that the strain is just beginning to be felt, and that careful provision must be made to meet it. The laws have been thoroughly revised; some wholesome clauses have been added, graduating the life subscriptions of new members according to their age, and extending the term of annual subscription from 20 to 25 years; and a recurrence and rigid adherence to sound principles in the increase of the capital has been determined on, as well as

the strict application of the proceeds to the specific objects of the Society, viz., the "granting relief to the widows and to the orphans, under fourteen years of age, of its deceased members, who, upon application, shall be considered as needing and deserving of pecuniary assistance."

The Society has been enrolled agreeably to the Acts of Parliament now regulating friendly societies, and will profit by the increased rate of interest allowed by the Commissioners for the Reduction of the National Debt, and by the other privileges conceded to these societies when duly enrolled.

One widow and six children have been added since the audit in September to the list of pensioners; and three applicants, in great distress, were declared ineligible for relief: their husbands not having been members.

Five arbitrators were elected—viz. the Rev. Samuel Wix, Col. Cooke, B. Bond Cabbell, J. Tidd Pratt, and R. B. Upton, Esquires. Dr. Mann Burrows was chosen a vice-president in the room of the late Dr. Frampton. Dr. Watson and Dr. Roots, Messrs. Stone, Blagden, Annandale, Reeve, and Michell, were chosen directors in the room of six directors retiring in rotation, and of Mr. Lloyd Jones deceased.

It appeared on the minutes that thanks had been voted to the committee who had presented to the Society several engravings from their portrait of Bransby B. Cooper, Esq., that some copies had been sold, and that the rest might be obtained at Messrs. Paul and Dominic Colnaghi's, or on application to the secretary or collector.

EFFECTS OF DIVING ON THE HUMAN BODY.

JOHN WILLIAMS, private, Royal Sappers and Miners, aged 26, of great strength and activity, but addicted to habits of intemperance, has been employed during the last two summers on the wreck of the Royal George at Spithead, as a diver, and is considered one of the most expert workmen. On the morning of the 11th July, 1842, clothed in his submarine armour, he was engaged at the bottom of the sea, at a depth of 80 feet from its surface, in fastening an iron chain round a block of wood, that was imbedded in the stiff mud; which task, after an hour's labour, he had just completed, when the flexible tube that supplied him with air suddenly burst above water, with a loud hissing noise, which was distinctly heard at the distance of fifty fathoms.

While the divers are employed in their laborious search under water, the utmost

vigilance is exercised by those on the deck of the hulk, to prevent or remedy any thing that might endanger the diver's life, or interrupt his operations. The persons, accordingly, who were stationed at the air-tube and life-line, by which the divers are assisted in their ascent, immediately perceived the accident that had happened, and one of them closed the hole in the tube with his hand. Williams was promptly hauled up, but his armour got entangled in the heavy rope-ladder by which the divers descend, and he and it were pulled up together, in the space of about a minute and a half from the occurrence of the accident.

On removing the helmet from his head, blood was seen running in a stream from his ears, nose, and mouth. His face and neck were swollen and discoloured; he looked faint, but was sensible. In this state he was conveyed to the hospital, where he arrived in an hour after the accident. His face then was one mass of lividity; his neck was excessively swollen, bloated, and suffused with livid-coloured blood. Dark patches of ecchymosis that did not coalesce existed over the clavicle and shoulders, with intervening spaces of skin of the natural colour. The lower part of the neck, which had been covered with the flannel and India-rubber dress, was mottled black and white; the dark ecchymosis being raised in lines, with slight streaks of white skin interposed. The livid discoloration of the face extended upwards to, but did not pervade the hairy scalp, where it terminated abruptly; nor were any spots seen below that part of the chest which was covered by the helmet. The lining membrane of the cheeks, under the tongue, over the fauces and pharynx, as far as the eye could reach, but especially over the tonsils, was black with ecchymosis. The conjunctivæ, where they are uncovered by the eyelids, and particularly round the margin of the corneæ, were turgid with black blood. He vomited some blood before he reached the hospital, and he afterwards made occasional efforts to vomit, apparently from the accumulation of blood in the fauces, which blood he now and then expectorated. The hæmorrhage had ceased from the nose and ears, which were still covered with clotted blood. He was perfectly sensible, but seemed drowsy; pulse 76, of natural strength; breathing interrupted by frequent, deep, involuntary sighs.

Lieut. Hutchinson, who was present when the accident happened, and who accompanied Williams to the hospital, said that the swelling of the face and neck had much increased, and the lividity had much deepened, during the hour that had elapsed since he left the hulk.

In the course of the same day, the lividity of the nose and point of the chin vanished,

and those parts resumed their natural colour. The colour of the face too became much paler in proportion as the vessels recovered their freedom and diameter; but there were large patches of extravasated blood in the eyes, mouth, face, and neck, which could only be removed by the tedious process of absorption. On his admission, warmth was applied to his extremities; some warm tea was given him, which he swallowed with the greatest difficulty; he had a turpentine enema; and in the course of the day twenty ounces of blood were taken from the arm. The following morning a senna draught was prescribed, which has been occasionally given since. He has complained of occasional headache and dimness of sight, from which he is now free. The swelling and ecchymosis of the face and neck have daily diminished; and these parts have now attained their natural size and colour, showing that they were swollen on his admission to twice their natural size. The ecchymoses under the conjunctivæ were very tardily absorbed, and minute clots were visible for three weeks around the union of the cornea and sclerotic coat.

A similar accident occurred, under the same circumstances, about twelve months ago, to private Roderick Cameron, of the same corps, whose head, neck, and eyes, were discoloured in the same way; an account of which has been read to the British Association by Dr. Richardson. When Cameron was hauled up on the hulk's deck, he had lost all consciousness, and was in a state of apparent asphyxia, from which he soon recovered. A little blood only escaped from his nose; and none from his ears or mouth. At the expiration of a month, the ecchymoses under the conjunctivæ—that remained the longest—had disappeared; and undaunted by the perilous accident which had jeopardized his life, he returned to his work as a diver, which occupation he still fearlessly follows. Williams too is undismayed by his frightful accident, and he has resolutely returned to pursue his adventurous life, feeling confident that the prudent application of those precautions which are now well known will secure him from danger.

An accident somewhat analogous, as far as I can make out the facts, occurred to a diver at the wreck of H.M.S. Thetis, in South America, who, with a companion, had descended in a diving-bell. In this case, also, the air-tube burst, and one of the men immediately extricated himself from the diving-bell, and rose to the surface of the water unhurt. The other man, by some means, got entangled, and was some time in freeing himself from the bell, which he at length accomplished by the aid of his companion, who again descended for the purpose. When he reached the surface of the

water he was much exhausted, and his face and body were blackened with ecchymosis down to the waist. This discoloration gradually went off in the course of a month, the blackness of the balls of the eyes being the last to disappear.

These curious and strikingly similar effects of the same kind of accident at Spit-head seem to arise from the sudden removal of the compressed air, and the consequent exertion of the pressure of the superincumbent water on those parts of the body which are not covered by the unyielding helmet. It is calculated, in round numbers, that the pressure of the water on Williams's body, at the depth of his submersion, at the time of the accident, was nearly equal to the weight of three atmospheres, which pressure was counteracted, and the equilibrium preserved, by throwing air through a forcing-pump, of great power, along a flexible tube into his helmet. This supply of air is steadily kept up, by constant regulated pumping, during the whole time the diver is under water; and until the centre lens of the helmet is opened on deck. The quantity of air thrown along the tube into the helmet far exceeds what is required to sustain easy respiration and the equilibrium of pressure; but no harm can result from any additional quantity of air that may be forced in; inasmuch as the superfluous air readily escapes into the sea, by a valve in the helmet, and is seen constantly bubbling up on the surface of the water. When the tube burst, and the air escaped from the helmet, this equilibrium of pressure and resistance was destroyed. The head was protected by the strong helmet, which did not collapse, from the pressure of the circumambient water, which now acted on the rest of the body with a force equal to two atmospheres, and produced a feeling, as he expressed it, as if he had been crushed to pieces by his dress. The blood thus driven from the extremities and from those parts of the body that were not covered by the helmet, was forced into the vessels of the head and neck (as it is into a part of the skin placed under a cupping-glass) some of which blood remained in the vessels and disappeared in a few hours after the accident; but a large portion was extravasated in the loose textures into which it had been forcibly driven.

Six divers have been employed, during the last three summers, on the wreck of the Royal George. They have now nearly succeeded in clearing it away, and the anchorage has been, in part, restored to its former security, with fewer accidents, and none of them fatal, than it is likely would have occurred in similar operations, during the same space, above water. The value and importance of these operations, and the extent to

which they may be applied in recovering treasure, or in the destruction of important works on an enemy's coast, are still imperfectly understood, but General Paisley has satisfactorily established that these sub-aqueous operations may be accomplished at any ordinary depth, with ease and safety, by men who are not professed divers, and who have not been trained up from their infancy to the art. The divers engaged at the Royal George have been selected from the corps of Royal Sappers and Miners, whose characters and abilities as steady men and good workmen were known to their officers: but only some of those so selected have become good divers; for the effects of protracted submersion are so different in different individuals, that it is not every man who can follow the perilous life of a diver. Many experience intense pain in the ears, and bleeding at the nose, during their descent; and Lieut. Hutchinson, who ably conducts the operations on the Royal George, always experiences these sensations, and he has never been able to remain under water for any length of time. Those who are accustomed to dive successfully, never suffer any such inconvenience, and I cannot learn that they experience any very marked uneasy sensation, unless an occasional sense of nausea, or distension at the stomach, headache, and rheumatism; but they all agree that they are much weakened and wasted by the exertion, and, as they express it, are not the men they were when they began the occupation. I have not had sufficient experience to determine whether it renders them permanently unhealthy or short lived.

The diving season commences in May and ends in October, and the divers are usually employed eight or ten hours in the twenty-four. No scene can be more striking than the activity that prevades the hulk during the immersion of the divers. The busy groups of pumpers, on whose regulated exertions the lives of the divers depend; the deep groanings of the air-pumps; the anxious care that the men stationed over the hulk's side, with the air-hose and life-line in their hands, bestow on the preconcerted signals, by which the divers communicate their wants with the precision of speech; the turbulent agitation of active ebullition, that is occasioned by the forced escape of the compressed air through the sea; the dreadful plunge and rapid disappearance of the enormous and unwieldy mass in this boiling cauldron; the eager look of expectation and vague apprehension, with which the spectators gaze on the whole process, exceed in interest any thing I have ever witnessed.

The divers remain under water, according to the nature of their work, from half an hour to three hours; and although, in order

to accelerate their descent, they are heavily laden, with ponderous shoes and large leaden weights on their shoulders, constituting a dress of a hundred and thirty pounds weight, they move about nimbly at the bottom of the sea, and feel and work as lightly as if they had nothing on their shoulders and feet.

Mr. Richard Tilston has kindly made a very correct drawing of Williams's appearance when he was brought to the hospital; to which he has added a faithful picture of him, in his working dress, at the time the accident occurred, in order to convey a notion of his mode of groping his way under water, with his pricker in one hand and dog in the other. In these submarine expeditions the divers frequently encounter each other. On one occasion, three of them, from two different hulks, met, joined hands in a circle, and gave three hearty cheers at this triumph of the art of diving. On other occasions, however, their meetings are less friendly; disputes arise as to their claims to particular logs of wood, quarrels and sparring ensue, in which their large iron prickers play the part of single-sticks.

Nothing can exceed the spirit and industry with which these operations have been conducted, or the laudable emulation displayed by the workmen to excel each other in the quantity of work they severally perform; and nothing has occurred to damp their ardour until lately, when Corporal Jones, one of the most courageous and useful divers, met at the foot of his ladder a dead body, which produced such a shock, that he immediately ascended in the greatest possible alarm; and spoke as if he had encountered a supernatural being. Unsuccessful attempts were made to rake the body up from below; but a few nights afterwards it was brought up by Corporal Harris, the most intelligent and persevering of the corps, on his pricker, without his knowing what he had got hold of. His consternation when he reached the surface, and found that it was a dead body, was so great, that he could not go down again, and he was replaced by another diver, who not having felt his horror, was not unwilling to descend.

The divers are employed four hours at a time during the slack tide of low water, and in that space they usually descend about four times. On their ascent after an hour's submersion, they appeared to me, while they were leaning against the hulk's side, to be pale, languid, and exhausted, though they did not admit that they were fatigued. When they reach the top of the ladder, the centre lens is unscrewed, their ponderous helmet is taken off, and they are generally allowed ten minutes to recruit, while the wood they may have collected is drawn up by a crane. They can only work

two hours, at the slack tide of high water, in consequence of the strength with which the tide ebbs and flows at that period, which, they say, begins earlier, and runs with much more rapidity, at the bottom than at the surface of the sea, and which would carry them off their legs. They are also sometimes interrupted by storms, that would prevent their signals from being understood by those who attend the air-pipes and lifelines on the hulk's deck.

The divers are clothed in flannel dresses, that fit closely, which retain the warmth of the body and prevent the chill that might be produced by the soaking of the water through the seams of the India rubber dress. This dress is protected on the outside by a canvas covering, from any injury it might sustain by rubbing against the nails or ragged pieces of the wreck.

We know little of the effects produced by the respiration of compressed air, but the divers find that they can breathe easily at the bottom of the sea; they can sing readily, but cannot whistle. They converse with each other, by shouting at the top of their voice, which they hear in a whisper.

Each diver is paid, besides his regimental day pay of one shilling and three-pence, two shillings a tide, working three tides in the twenty-four hours.

Since the occurrence of Williams's accident, each diver has been furnished with a safety-valve, placed between the end of the air-pipe and the helmet. The air being forced in from the pump, opens the valve, and passes into the dress, but the moment this pressure is removed, the valve closes and prevents any air in the helmet returning through the pipe. This contrivance, however, I fear, in the event of an accident, would only substitute suffocation for that of being squeezed to death. — *Letter from Mr. Liddell in the Medico-Chirurgical Review*

OF SPUTA.

THE mucus ejected from coughing differs according to the character, extent, and stage of the pathological process; hence I shall first speak of the sputa from normal inflammation; secondly, of sputa from anomalous inflammation, and also on the appearance of sputa produced by the tubercular process.

Of sputa generated by normal inflammation.—Sputa produced in the commencement of a catarrhal affection of the air-passages, are found to be white, pellucid, thin, easily drawn into threads, and here and there they disclose within themselves a few small flocculent greyish nubes. The quantity of these sputa bears a direct relation with the extent of the pathological process.

Investigated by the aid of the microscope, the white pellucid fluid contains a very few round globules, filled with primitive molecules, and many cells of nucleated epithelium; the globules as well as the cells appear immersed in the pellucid fluid (proper mucus), but the greyish flocculiare composed of copious round globules filled with primitive molecules, and linked together with the proper mucus.

The catarrhal process increasing, the greyish flocculi receive an increase, which at length, from a yellowish-white, become tinged of a deeper yellow colour; the more the flocculi increase, the more the quantity of white fluid mucus decreases, the sputa becoming globose, and extremely tenacious.

The flocculi, investigated under the microscope, are composed of round globules filled with primitive molecules and a central vesicle. These globules appear linked with extremely tenacious mucus; but the white mucus (properly mucus), is a white amorphous substance, easily drawn into pellucid threads, which disclose cells of nucleated epithelium, and a few globules of a yellowish-white colour, endowed with the smallest molecules and a central nucleus. The inflammatory process decreasing, the quantity of globular sputa decreases; they acquire a somewhat whitish colour, until, the inflammatory process being finished, all yellow secretion ceases.

Microscopico-chemical investigation.—The globules contained in yellow mucus consist of smooth, very thin envelopes, in which again primitive molecules, and a single or double central vesicle are seen. The magnitude of the globules exceeds by six or eight times that of the blood-discs; but the diameter of the central vesicles scarcely equals it.

Globules exposed to distilled water increase in volume, although they may all have been freed from the adhering mucus; the envelopes break, the central vesicles and primitive molecules remaining.

Acetic acid, 1,030, dissolves the envelopes and primitive molecules, but the central vesicles remain intact; aye, and more than this, they are seen more clearly, but their number increases from one to six.

Oxalic acid dissolves the envelopes. the central vesicles from two to five in number remaining.

Tartaric acid quickly dissolves the envelopes; the central vesicles, observed of a white colour, remain.

Diluted nitric acid 1,170, corrugates the globules, and tinges them of a deeper yellow colour.

Diluted hydrochloric acid 1,070, corrugates the globules.

A dilute solution of the nitrate of silver 1,075, corrugates the coverings of the glo-

bules, and leaves them tinged of a yellowish colour.

Concentrated solution of nitrate of silver 1,275, at first dissolves the coverings and the primitive molecules, the central vesicles remaining, from one to four being seen clearly; but in a longer time the central vesicles themselves becomes dissolved.

Solution of pure potash, 1,350, dissolves the globules, and a white pellucid mucous fluid remains.

Spirit of caustic sal ammonia 0,980, produces no change.

Lime water occasions no change.

Spirits of wine 0.830, contracts the globules.

In crude pneumonic sputa, white, irregular, turbid particles are found intermixed with mucus, which are composed of an entire patch of cells of non-nucleated epithelium joined to each other in symmetrical order, on whose surface irregular globules (plastic exudation) are found.

Tenacious mucus of yellow globose sputa, which embrace or enclose the globules above described, appears, when submitted to the microscope, white, almost pellucid, and free from globules.

Distilled water does not produce any change in it.

Treated with nitric acid 1,170, it forms yellow filaments, decussating among themselves in different directions, and marked with irregular, obscure margins.

The same happens if it have been treated with hydrochloric acid, 1,070.

Solution of nitrate of silver 1,075, forms filaments, which after a little time are dissolved.

Concentrated acetic acid 1,030; solution of oxalic acid; solution of tartaric acid, occasion no change.

Of Sputa generated by Anomalous Inflammation, and from the Tubercular Process.—Sputa generated by the tubercular process differ according to the nature, the extent, and the stage of the disease.

The tubercular process is three-fold:—

1. Miliary tubercular process. 2. The tubercular process of infiltration. And, 3. The tubercular process, forming solitary tubercles, distinguishing by turns the characteristic sputa which each process forms.

Of sputa ejected from the process forming Solitary Tubercles.—A solitary tubercle, generating in the texture of the coats of the air-tubes, or in the cellular tissue surrounding the bronchi or blood-vessels, only affects the pulmonary secretion so as to increase it, and also presses upon the coats of the intermediate and capillary blood-vessels, as well as upon those of the minute bronchial ramifications, so much so as to impede or totally put a stop to the circulation of the blood, as well as air, in that small portion of lung

lying next the tubercle. The product generated from the irritation of the mucous membrane differs in no respect from that of a mucous membrane irritated by the application of cold, therefore there is as yet no *qualitative* difference between the sputa of an incipient catarrhal process, and those of a commencing tubercular process; but a *quantitative* difference is given, for the sputa ejected from an incipient catarrh are more copious than those which were expectorated from the irritation of a solitary tubercle.

The tubercle increasing, the quantity of sputa increases until the tubercle becomes softened, which, having taken place, besides the concocted or puriform sputa, there are found yellowish-white and finely granulated particles mixed with the white mucus; or, yellowish-white oval lenticular particles, whose longest diameter scarcely exceeds the half of a Viennese line, adhering to the bottom of the smooth vessel in which the sputa are accumulated.

It is seen by the microscope that these yellowish-white particles are a compound of roundish or ovate lenticular spheres, gashed globules, and mucus. The lenticular spheres are from the same size to ten times larger than the globules of pus; they present, for the most part, a smoothish surface, and, in almost all, obscure striae, running concentrically, are detected. Some of these spheres are fissured once or oftener from the periphery towards the centre, the broadest part of the fissure continually decreasing, until it altogether ceases far in towards the centre. They are easily broken, and break with angular margins; whereas, if one look closely at the face of the fracture, he will perceive the lenticular sphere to be composed of concentric lamellae, resembling a bulb of garlic.

The lenticular spheres fall to the bottom in distilled water. Dried for a long time in air, they are not changed, with the exception of a slight diminution of their diameter.

They are not changed by distilled water.

A solution of caustic potash dissolves them.

They are in no respect changed by liquid ammonia 0,910.

Concentrated acetic acid 1,030, and solutions of tartaric and oxalic acids, produce no change.

In dilute nitric acid all their diameters are enlarged from three to five times, and the concentric striae disappear; they swell like inflated bladders, become semi-transparent, are bent in a different manner, and ultimately disappear altogether.

They are not changed in hydrochloric acid 1,070.

Carbonate of soda, acetate of lead, prussiate of potash, and ammoniacal sulphate of copper, do not change them.

Solutions of the nitrate of silver 1,275,

change them in the same manner as nitric acid, only they do not disappear so quickly.

Infusion of galls, and pure alcohol 0,830, produce no change.

As long as the softened tubercle shall not have thoroughly been thrown off, so long are the lenticular spheres mixed with the sputa.

The tubercle being expectorated, the sputa again differ according to the difference of the pathological process; for, if the tubercular process has been local, the parietes of the cancer secrete globules of pus, which are ejected in union with the mucus of the irritated or inflamed mucous membrane of the air-passages, until the contracted parietes and the cavern, forming a cicatrix by granulation, become consolidated, the lenticular spheres being no longer detected in the sputa.

But if the tubercular process (the individual labouring from a tuberculous dyscrasia), is not quieted by the ejected tubercle, the lenticular spheres are found constantly intermixed with the sputa.

There are seen in the tuberculous sputa, besides the lenticular spheres now described, and white tenacious flocculi before noticed, white mucous and granular-looking shreds. Investigated by the microscope they contain cells* composed of tetra or pentagonal margins with obscure or unequally yellow centres, the striated margins having the diameter and texture of the intermediate vessels (capillaries.) Besides these cells, there are here and there found yellow cylindrical fibres marked with black transverse lines (muscular fibres.)—*Microscopic Journ.*

CASE OF

RUPTURE OF THE DIAPHRAGM.

THOUGH a constant reader of your valuable periodical *The Veterinarian*, I have not seen many cases recorded of death almost immediately following rupture of the diaphragm. I will therefore take the liberty of sending one, and if it is deemed worthy of insertion, it is at your service.

On the 8th of January last, Mr. Cope, whose pupil I have the honour to be, was desired to look at a black mare, the property of a farmer in this country, who said that, in coming up one of the steep hills that are so plentiful in this county, she stopped suddenly and breathed very laboriously, so that he could hear her at a great distance off. She was unable to proceed for full fifteen minutes, and then she slowly journeyed on with her load, which was upwards of a ton. On coming under our care the following symptoms were presented:—

* Infiltrated pulmonary cells, (cellulas pulmonales infiltratas.)

She was constantly lying down and getting up again—while down she would frequently turn her head to her side—she perspired very much—the pulse was 80, and hard—the extremities moderately warm.

Venesection was had recourse to immediately, and copiously; and opium, combined with ol. lini was administered; but in despite of all our efforts she died in about six hours after the first appearance of illness.

It would be useless to occupy much time in describing the post-mortem appearances: suffice it to say, that on examining the chest the diaphragm was found to be ruptured. The rupture extended about seven inches, and a large portion of the intestines had protruded through the opening. They were very considerably inflamed, and this rupture was doubtless the cause of death.—*Mr. Osborne, in Veterinarian.*

was opened; but the hæmorrhage was promptly arrested by tents steeped in a styptic liquid, and introduced into the wound made by the trocar.

The reporter concluded by proposing that Dr. Lecanus should be thanked for his interesting communication, and that his paper should be deposited in the archives of the Academy.

M. DUBOIS (of Amiens).—I should wish to know whether the author of the case has sought for, and mentioned, the causes of this ascites? Did he ascertain the state of the liver and spleen? In short, did he recognize any organic disease?

M. LONDE.—The author does not speak of any organic disease; he only mentions a chronic inflammation of the intestines and peritoneum.—*Gazette Médicale*, Sept. 24, 1842.

REMARKABLE CASE OF ASCITES.

EMPYEMA.

At the sitting of the French Academy of Medicine, on the 20th of September, M. Londe read, in his own name and M. Jobert's, a report on a case sent to the Academy by Dr. Lecanus, of Yvetot. It was an account of a woman who was tapped 866 times for ascites, of which she has been completely cured these two years.

The interest of this case, said the reporter, consists in the knowledge of all the details which I am about to analyse.

A woman, aged 36, was attacked, in 1823, by a chronic entero-mesenteritis, accompanied by marasmus, suppression of urine, and irregular menstruation. By degrees the abdomen became of enormous size, from the presence of fluid accumulated in the cavity of the peritoneum. The first tapping gave issue to twenty pounds of a lemon-coloured limpid fluid; and M. Lecanus ascertained, after the sinking of the abdomen, that it contained enormous indurations. Ten days afterwards she was again tapped, and so rapidly did the fluid accumulate, that it was necessary to repeat the operation every six, eight, ten, or at the utmost twelve, days. Fifteen years had elapsed in this manner, and tapping had been performed 810 times, when Dr. Lecanus thought of trying compression on the abdomen with pieces of paste-board covered with linen. This remedy, employed gradually, at first retarded the accumulation of the fluid; and at the end of six months, during which tapping was practised at more or less distant intervals, it was perceived that the ascites no longer returned. The patient has now been completely cured these two years, having undergone tapping 866 times during 15 or 16 years. Once only the epigastric artery

At the meeting of the Academy of Sciences, on the 19th of September, a memoir was read by M. Faure, first Physician to the Military Hospital at Toulon, on paracentesis of the thorax, performed for the cure of pleuritic effusion.

In this paper M. Faure begins by showing the importance of the subject of empyema, and he refers to the discussions which took place in the Academy of Medicine on occasion of a memoir upon the same subject which he addressed to that learned society.

The author shows, that in pleuritic effusion, paracentesis of the thorax is, in the majority of cases, the only means of endeavouring to save the patient from an almost inevitable death; and that this operation is far too much neglected because, he says, its dangers have been exaggerated; while, on the other hand, its indications have not been well appreciated, nor the time precisely pointed out when we ought to have recourse to it.

M. Faure lays it down as a principle, that by puncturing the thorax with a trocar, we are safe from a very dangerous accident, the entrance, namely, of air into the thorax; and affirms that at the expiration of forty-eight hours, there frequently remains no trace of the puncture. Lastly, after having said that more than 200 persons die annually, suffering under thoracic effusion, whose life might have been prolonged, or their last moments rendered less painful by paracentesis, M. Faure cites three cases of empyema for which he operated at Toulon, last April and May. The patients, who were all soldiers from Africa, were in great danger from pleuritic effusion, suffocation being imminent. One died a few days after the operation; the other two were still alive on the 31st of July,

when M. Faure received accounts of the sequel of these three operations.

MM. Magendie, Serres, and Breschet, were commissioned to report on this memoir.—*Gazette Médicale*, Sept. 24th, 1842.

CUBEbine.

M. MONHEIM has described, under the above term, a volatile substance. M. Cassola, under the same name, has described a soft and resinous, and Messrs. Soubeiran and Capitaine a crystallized substance. M. Steer has confirmed the result of these latter writers by renewed experiments, the result of which we proceed to relate. After having submitted the cubeb pepper to distillation, in order to remove the essential oil, it is dried, and an alcoholic extract is made, which is distilled until there remains only one-fourth of the primitive volume, and which is then filtered, previous to submitting to renewed distillation. When this has been done, a residue containing some resin is obtained, and which assumes the condition of a mass approaching to the crystalline form, when allowed to remain in a cold place. This crystalline mass is placed on linen, which allows the resinous liquid to percolate (the cubebine of M. Cassola): after twenty-four hours this is almost completely removed, and the mass which remains is dissolved in three or four times its weight of boiling alcohol, sp. gr. 0.90. The solution is allowed to clarify, maintaining the boiling temperature, the liquid is decanted from the undissolved resin, and the cubebine crystallizes on cooling. In order to purify it, it is dissolved in concentrated boiling alcohol; animal charcoal, and a little boiling water, are afterwards added: the boiling liquid is filtered, and then allowed to cool, by which the cubebine is precipitated in needles of some lines in length, uncoloured, and of a pearly lustre. It crystallizes from concentrated alcohol in grains. Under this form it possesses but a weak odour of cubebs, and is insipid, although the spirituous solution has a bitter taste. It is insoluble in water, almost insoluble in cold alcohol, but very much so in boiling alcohol, even when it contains some water. It separates from the solution on cooling under the form of flakes, and these are readily soluble in cold alcohol.—*Annals of Chymistry and Pract. Pharmacy*, No. I.

ROYAL COLLEGE OF SURGEONS.

LIST OF GENTLEMEN ADMITTED MEMBERS.

Friday, October 7, 1842.

R. D. Adams.—W. Thomas.—J. Conan.—W. G. Walker.—H. S. J. Clarke.—G. Stockil.—J. Christie.—G. H. Mansdorp.—A. G. Purchas.—J. Kenyon.—H. Graves.—W. C. Thurgar.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

Thursday, September 29, 1842.

W. W. Hyde, Witney, Oxon.—A. G. Purchas, Pilstone, Chepstow.—F. A. Tipple.

October 6, 1842.

W. A. Sumner, London.—W. N. Clarkson, Whithy.—J. Moore, Wickham Market, Suffolk.—J. Vincent, Horningtoft, Norfolk.

A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, October 1, 1842.

Small Pox	10
Measles	25
Scarlatina	31
Hoooping Cough	15
Croup	7
Thrush	5
Diarrhœa	13
Dysentery	10
Cholera	2
Influenza	0
Typhus	38
Erysipelas	2
Syphilis	0
Hydrophobia	0
Diseases of the Brain, Nerves, and Senses ..	152
Diseases of the Lungs and other Organs of Respiration	265
Diseases of the Heart and Blood-vessels ..	24
Diseases of the Stomach, Liver, and other Organs of Digestion	79
Diseases of the Kidneys, &c.....	4
Childbed	5
Ovarian Dropsy	0
Disease of Uterus, &c.	4
Rheumatism	1
Diseases of Joints, &c.	2
Ulcer	2
Fistula	1
Diseases of Skin, &c.....	0
Diseases of Uncertain Seat	121
Old Age or Natural Decay.....	64
Deaths by Violence, Privation, or Intemperance	36
Causes not specified	6
Deaths from all Causes	924

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude $51^{\circ} 37' 32''$ N.
Longitude $0^{\circ} 3' 51''$ W. of Greenwich.

October.	THERMOMETER.		BAROMETER.	
Wednesday	5	from 30 to 51	30.10 to 30.15	
Thursday	6	35 55	30.20	30.23
Friday	7	40 57	30.15	30.24
Saturday	8	43 58	30.29	30.36
Sunday	9	40 55	30.41	Stat.
Monday	10	48 57	30.30	30.35
Tuesday	11	33 56	30.30	30.25

Wind, N. by W., N., and N. by E.
Generally clear, and remarkably fine.

CHARLES HENRY ADAMS.

WILSON & OGILVY, 57, Skinner Street, London.

THE LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, OCTOBER 21, 1842.

LECTURES
ON THE
THEORY AND PRACTICE OF
MIDWIFERY,

*Delivered in the Theatre of St. George's
Hospital,*

BY ROBERT LEE, M.D. F.R.S.

LECTURE III.

*The Anatomy of the unimpregnated Uterus
and its appendages.*

THE ovaria and fallopian tubes, the uterus, vagina, and external organs, compose the generative system of the human female. The uterus is situated within the pelvis, behind the bladder, before the rectum, below the small intestines, and above the vagina. The vagina extends downwards and forwards obliquely between the bladder, urethra, and rectum, from the uterus to the vulva, which is situated at the outlet of the pelvis. Between the layers of peritoneum, which are reflected from the sides of the uterus to the pelvis, forming the broad ligaments, are inclosed the fallopian tubes, ovaria, and round ligaments.

The two ovaria are situated on the sides of the uterus, in the posterior duplicatures of the broad ligaments, behind and a little below the fallopian tubes. At the age of puberty the ovaria are of an oblong form, flattened on the anterior and posterior surfaces, varying from an inch to an inch and a half in length, and from a quarter to half an inch in thickness. The inner extremity of each ovarium is fixed to the uterus by a short band or ligament, chiefly consisting of fibres sent off from the muscular coat of the uterus. In this preparation there is a small fibro-cartilaginous tumor, with its blood-vessels injected, which has been formed in the right ovarian ligament. The outer ex-

tremity of each ovarium is always attached to the corpus fimbriatum, and by this means the relative situation of the ovarium to the fallopian tubes and uterus is preserved.

The ovaria consist of a serous coat derived from the peritoneum, and a dense parenchymatous structure, called the stroma, in which the Graafian vesicles or ovisacs are contained. Some anatomists describe a fibrous tissue under the peritoneum of the ovary, which they have called the tunica albuginea. The Graafian vesicles differ from one another in size. On an average they measure about two lines in diameter, and generally exceed ten in number. The largest project at the surface, and the smaller vesicles are imbedded in the stroma of the ovary. Each vesicle consists of two distinct coats or membranous layers, which adhere so firmly, that they are separated with great difficulty from one another. Their outer coat adheres loosely to the stroma of the ovary by soft cellular membrane, through which numerous arteries and veins pass to the vesicle, and ramify upon its coats. The frequent extravasation of blood into the cavities of the Graafian vesicles proves that their inner membrane is vascular.

Within each Graafian vesicle is a layer composed of granules; and within this layer is contained an albuminous fluid. Imbedded in that part of the granular layer corresponding to the place where the wall of the Graafian vesicle is in contact with the peritoneum, is the ovum or ovule. This is a very minute body, of a rounded form, consisting of yelk granules contained within a thick transparent envelope, which is just perceptible to the naked eye. The part of the granular layer where the ovum is situated is in the form of a disc, in which there is a cup-like depression, in which the ovum lies. The disc is called the proligerous disc. If a Graafian vesicle be removed from a recent human ovarium, and opened upon a plate of glass, and the contents pressed out, the transparent ovum can

readily be observed with the naked eye, or with a simple magnifier, after the opaque granules in which it is imbedded have been washed away with a few drops of pure water.

According to the independent microscopical observations of Coste in the rabbit, and of Valentin and Mr. Wharton Jones in several of the mammifera, there is a transparent vesicle, about one-sixth of the diameter of the ovum, inclosed within it, which is analogous to the vesicle which exists in the cicatricula of the immature eggs of birds, and also in the ova of all other animals. This is called the germinal vesicle; and on one side of this there is an opaque spot, called the germinal spot.

This spot was discovered and described simultaneously and independently in this country and in Germany by Mr. W. Jones and Professor Wagner. The germinal vesicle, and the spot on its side of the mammiferous ovum, was, I believe, first shewn in London in 1837, at the College of Surgeons, by Mr. Wharton Jones, two years after I had presented his paper to the Royal Society describing and delineating it.

The earlier anatomists believed that the ovaria performed a function similar to the testes. Harvey supposed something indefinite came from the ovaria, but thought it was only in the uterus that the ovum was formed. Steno having observed the Graafian vesicles in the ovaria of the deer, guinea-pig, sow, ass, wolf, &c., and supposing them to be ova, concluded that the ovum is first formed in the ovaria, and afterwards developed in the uterus.

De Graaf, in 1672, first accurately described the structure of the ovaria, and the vesicles they contain. He ascertained that these burst after impregnation; that a yellow substance, called the corpus luteum, is formed in the situation of the ruptured vesicles; and that the number of these yellow bodies corresponds with the number of embryos subsequently found within the uterus. In the fallopian tube of the rabbit, three days after impregnation, he saw bodies of a defined shape, much smaller in size than the vesicles in the ovaria, from which, recognising these bodies as ova, he inferred that these vesicles of the ovaries are not the ova. In 1778 Cruickshanks made some experiments, which confirmed the accuracy of De Graaf's observations, which had been called in question by Haller and other physiologists. Prevost and Dumas twice perceived a small spherical body within the unimpregnated Graafian vesicle of the rabbit, which they suspected was the ovule. Professor Baer first unequivocally demonstrated, in 1827, the ovum in the ovary; but he mistook its nature, supposing it to be analogous to the germinal vesicle discovered by Purkinje two years before, in the cicatricula of

the immature egg of the bird. The discovery of the germinal vesicle in the mammiferous ovum by Coste, Valentin, and Jones, demonstrated the inaccuracy of Baer's view, and established the true nature of the body contained in the Graafian vesicle.

The ovaria are long and slender in the fœtus, and are then placed upon the psoæ muscles, a little way under the kidneys. They contain small Graafian vesicles soon after birth. At the age of puberty their volume increases, and the Graafian vesicles enlarge and contain ova. The surface of the ovaria is perfectly smooth [exhibiting a preparation] until the period when menstruation commences: it is afterwards marked by irregular depressions, like cicatrices, in the peritoneal coat. After the cessation of this function the ovaria shrink, become hard and *unequal*, and the coats of the Graafian vesicles are thick and opaque, and their cavities often filled with a black, red, or fawn-coloured substance, of a soft consistence. In extreme old age the parenchymatous substance of the ovaria is so much diminished, that they are not larger than those of a young child, and have the same shape.

The development of the pelvis, uterine system, and mammae, the function of menstruation, and all the peculiarities of the human female, depend upon the ovaria. The ovaria may be considered as the essential organs of the generative system in all the different classes of animals, for they are always present, whatever form this system may assume. At each menstrual period a Graafian vesicle bursts, and the contents escape. When the ovum is impregnated, it passes from the ovary into the fallopian tube, and a corpus luteum is formed around the Graafian vesicle in which it had been contained.

The ovaria are liable to many diseases from the age of puberty to the period when the catamenia disappear. Their peritoneal coat often becomes inflamed, and false membranes are formed, by which they become firmly united to the fallopian tubes and uterus. The coats of the Graafian vesicles are often in a thickened morbid state, and their cavities distended with blood and other fluids. Great cysts and tumors, some of which are of a malignant nature, are not unfrequently formed in the Graafian vesicles, or parenchyma of the ovaria. All these, and the diseases of the unimpregnated uterus, fallopian tubes, vagina, and external parts, which are numerous and important, will be considered in a subsequent part of the course.

The *fallopian tubes* extend between the upper and lateral parts of the uterus to the ovaria. They are from four to five inches in length, and are situated in the middle duplicatures of the broad ligaments, between

the two layers of peritoneum ; as the intestines are in the mesentery. They pass from the sides of the uterus at first upwards and outwards, and then downwards, where each terminates in a wide, open, expanded extremity, which is divided into fringes, and is called the corpus fimbriatum. In each fallopian tube there is a canal, by which a communication is formed between the peritoneal cavity and the cavity of the uterus. This canal is very slender, where it is entering the uterus, being only sufficient to admit a bristle, but it is wider toward the outer extremity. Air and mercury pass readily along the tubes, from the corpora fimbriata into the cavity of the uterus.

The fallopian tubes consist of a peritoneal, muscular, and mucous coat. The latter is a continuation of the mucous membrane which lines the cavity of the uterus ; and through the whole course of the tube, it forms longitudinal plicæ, which run in a spiral direction, as in the oviducts of birds.

Between the mucous and peritoneal coats of the tube is situated the muscular coat. In the ordinary condition of the tube, the fibres of this coat are so thin and pale, that it is difficult to demonstrate them, and some anatomists have, in consequence, expressed doubts about the existence of a muscular coat in the fallopian tubes.

Here is a specimen of fallopian tube gestation, [exhibiting it] in which the muscular coat of the right fallopian tube is more than a quarter of an inch in thickness. The entire ovum is contained in the tube about midway between the two extremities ; the decidua, chorion, amnion, placenta, embryo, and even the vesicula umbilicalis, are all in the tube, and there is no vestige of decidua within the uterus. The walls of the tube had performed in this case all the functions of the uterus, till the time it burst, and the fatal internal hæmorrhage took place. The muscular coat of the tube could readily be separated into distinct strata or layers, like the walls of the gravid uterus, and you can see large veins running through it similar to the sinuses of the uterus. I traced a communication by means of the coagula of the fibrine of the blood which filled these veins, between the interstices of the foetal vessels of the placenta, and these veins in the muscular coat of the tube, which opened obliquely into one another, and enlarged as they proceeded outward to the surface, where they terminated in one of the spermatic veins.

One of the best modes of examining the structure and connexions of the fallopian tubes is to remove them with the ovaria from the uterus, and lay open the canal of the tubes from the corpora fimbriata to the uterus, and cover them with water or alcohol, or suspend them in fluid. This

has been done in another preparation I now show you, and the tube thus opened, the walls of the canal of which are held asunder with bristles, is suspended by the ovarium in alcohol.

A bristle fills the canal where it is cut across near the uterus. The canal is seen enlarging towards the corpus fimbriatum, and the longitudinal folds of the lining membrane are remarkably distinct. The corpus fimbriatum presents the appearance of a large soft vascular membrane, folded up like a fan or umbrella, and one of its broad fringes is seen uniting with the outer extremity of the ovary. The peritoneal coat of the ovary is continuous with that of the fringe, by which the tube and ovarium are united.

In another preparation, [exhibiting it] the blood-vessels of the ovaria and fallopian tubes have been very successfully injected. Numerous branches of arteries from the spermatics are seen proceeding to the tubes, and especially to its outer extremity, and forming complete loops or rings around them. Branches from the same arteries supply the ovaria. There is a plexus of great tortuous veins also seen extending between the base of the ovaria and the tubes, which are much larger than they would be if their sole function were to return the blood from the arteries of the tube. These veins probably answer the purpose of an erectile tissue, and cause the necessary approximation of the ovaria and tubes when conception takes place.

The structure of the fallopian tubes is often destroyed by adhesive and suppurative inflammation. An accumulation of a large quantity of fluid sometimes takes place in their canals, when their extremities have been closed by inflammation and other causes. In persons who have died of tuberculous phthisis, I have occasionally seen a quantity of soft scrofulous matter within them, and their coats thickened and indurated. Fibrous and malignant tumors are very rarely developed in the walls of the fallopian tubes.

Ciliary movements have been observed by Purkinje and Valentin in the mucous membrane of the fallopian tubes, uterus, and vagina of the rabbit, both before and after impregnation. The direction of the motion is from within outwards. I do not know whether this has been seen in the human subject.

In shape the uterus resembles a pear, about three inches long, compressed before and behind. The large extremity is placed superiorly, and the smaller inferiorly in the pelvis. The uterus is in the direction of the brim of the pelvis, and the vagina, with which it forms a great angle, is in the axis of the outlet. The uterus is divided into fundus, body, cervix, and orifice. The

fundus is the convex portion which lies above the entrance of the fallopian tubes into the cavity. The *body* of the uterus extends between the fundus and *cervix*, which is the contracted part below, and which terminates in the *os tinea*. The uterus consists of a dense muscular coat, which is invested on the outer surface by peritoneum, and internally by a mucous membrane, which is continuous with the inner membrane of the vagina and fallopian tubes. The peritoneum adheres firmly to the muscular coat of the whole fundus, and a considerable portion of the body of the uterus; but between the muscular coats and peritoneum of the lower part of the body and cervix there is a quantity of soft cellular membrane interposed. The peritoneum behind passes down, and, after covering the whole cervix uteri and a small portion of the vagina, is reflected upward over the rectum. The anterior part of the cervix uteri, being in immediate contact with the bladder, is not covered with peritoneum. The muscular coat is so dense that it is impossible to separate and to trace the particular direction of the fibres of which it is composed, or to demonstrate the course which they pursue, as we can do in the gravid uterus. Around the fallopian tubes they appear to run in a concentric direction. From the upper and forepart of the uterus, near the fallopian tubes, the round ligaments pass off, which run through the abdominal canals, and are lost about the groins and external parts. These have an entirely different structure from the broad ligaments, which are layers of peritoneum, or from ligaments in any other part of the body. In the gravid uterus it can be readily shewn that they are almost entirely composed of fibres sent off from the muscular coat of the uterus with blood-vessels and nerves.

If an incision be made through the walls of the uterus before or behind, its small triangular-shaped cavity, lined with a vascular membrane, comes into view. The fallopian tubes open into its upper angles, and the cervix uteri into its lower.

The *cervix uteri*, which varies in length, is contracted at the upper and lower, or uterine and vaginal orifices. The *penniform rugæ* are situated in the middle part of the cervix, between which there are seen numerous orifices of compound mucous ducts or lacunæ, which secrete a peculiarly viscid matter. The Nabothian glands, which often present the appearance of small sacs distended with viscid fluid, are situated both upon the margin of the os uteri and within the cervix. The *os uteri* has two lips, with a transverse chink or depression, which is sometimes so slight that it can scarcely be felt with the point of the finger. There is a great difference observed in the length of

the cervix, in the shape of the orifice, and condition of the lips, in different subjects. In some the os uteri is like a flattened nipple, and projects slightly into the vagina; in others it is round and prominent. The anterior lip usually hangs lower in the vagina than the posterior: the vagina being united to the cervix uteri higher up than before. In women who have had children the os uteri is not so uniformly smooth and regular as in those who have never been confined.

The internal membrane of the uterus is so thin and delicate, and adheres so firmly to the muscular coat, that its existence, as a separate tunic, has been called in question by some anatomists. In several preparations [exhibiting them] fibrous tumors have been developed under this membrane; and you can see it distinctly reflected over the surface of these tumors from the uterus. The appearances presented by the fibres of the middle coat of the gravid uterus, and the sensibility and contractile power of the uterus during labour, prove, beyond all doubt, that it is muscular, which has likewise been disputed.

The vagina extends from the uterus to the external parts. It consists of an internal mucous membrane, and of a dense highly elastic fibrous tissue, in which numerous arteries and veins ramify, and to which many nerves are distributed. The coats of the vagina are continuous with the middle and internal coats of the cervix uteri. This is clearly seen in a preparation [shewing it] of the uterus and vagina, in which the cervix is much elongated, and the coats of the vagina thickened from irreducible prolapsus for several years. The penniform rugæ and compound lacunæ are also much more distinctly seen in this lengthened cervix than in the ordinary condition of the part. Near the orifice of the vagina the lining membrane, especially of the anterior wall, is thick, and deep transverse rugæ or plaits are observed in it, and in the posterior surface. There are numerous papillæ on the edges of these rugæ, and many mucous follicles between them. The vagina is widest at the upper part, where it is attached to the uterus; and its lining membrane is more smooth than near the orifice.

There is a great plexus of veins in the outer coat of the vagina near its orifice, which is also surrounded with the sphincter vaginæ muscle. The vagina adheres firmly by cellular membrane to the urethra, the bladder, and rectum. Its upper extremity is attached to the neck of the uterus lower down before than behind. The posterior wall of the vagina is separated from the rectum the whole thickness of the perineum, by a triangular space, which is filled with a cellular membrane. The direction of the axis of the

vagina, as I have already said, does not correspond with that of the brim, but of the cavity and outlet of the pelvis.

The orifice of the vagina is about an inch and a half from the symphysis pubis; and it is either partially closed by the *hymen*, which is a doubling of the lining membrane, of a concentric shape, or it has several small prolongations of the lining membrane projecting from it, which are called the *carunculae myrtiformes*.

The *mons veneris*, labia, clitoris, nymphæ, vestibulum, and perineum, are the external parts of generation. The *mons veneris* is situated over the symphysis pubis, and is composed of adipose and cellular membrane covered by the integuments. It divides into the *labia*, which pass down and bound the orifice of the vagina on each side, and afterwards unite at the anterior border of the perineum.

Between the labia is situated the *vulva*, which contains the clitoris, nymphæ, and the orifices of the vagina and urethra. The body of the clitoris, which is situated at the upper part of the vulva, is formed by the union of its two crura, and its anterior extremity is covered by the prepuce, from each side of which one of the nymphæ descends obliquely about an inch and a half. The nymphæ chiefly consist of dense cellular tissue and blood-vessels. Under the clitoris and between the nymphæ is the smooth triangular space called the vestibulum, at the lower part of which, and immediately above the ostium vagina, is the orifice of the urethra. The urethra passes to the bladder under the symphysis pubis along the upper surface of the vagina, to which it is firmly united by a thick fibrous and vascular structure. The mucous membrane of the urethra is usually of a red colour, and it is perforated with the ducts of several mucous glands. Two of these, near the orifice, have been called Cowper's glands of the female. The perineum extends from the posterior commissure of the labia or fourchette to the anus. Within the fourchette is a smooth depressed cavity called the fossa navicularis.

The uterus and its appendages are supplied with blood from the spermatic and hypogastric arteries. The spermatics, after sending branches to the tubes and ovaria, pass down to the uterus, and there freely anastomose with the uterine branches of the hypogastrics. The upper part of the uterus is chiefly supplied with blood by the spermatic arteries; and the body, cervix, and vagina, solely by the hypogastrics. The whole muscular coat of the uterus, as you may observe in this preparation, is pervaded with innumerable convoluted branches of the spermatic and hypogastric arteries, which have been injected, and are seen passing obliquely through the different strata to the

lining membrane. The veins form a great plexus in the muscular coat, which can readily be traced from the inner to the outer surface of the uterus, opening obliquely into one another, and enlarging as they approach the trunks of the spermatic and hypogastric veins. Even in the unimpregnated uterus the veins form great plexuses, not only in the substance of the organ, but around the cervix and body, and in the walls of the vagina, and between the ovaria and fallopian tubes. In this preparation [exhibiting it] all these veins have been filled with blue injection; and so large are they, that the uterus appears literally imbedded in them. At the full period of pregnancy the veins in the substance of the uterus form one of the greatest plexuses in the human body; and where the placenta adheres, they open, after its separation, into the cavity of the uterus. The lining membrane of these great veins—and they have only one membrane, and no proper valves—is continuous with the mucous membrane of the uterus, as the lining membrane of the fallopian tubes is continuous with it and with the peritoneal sac. I believe it is in consequence of the peculiar manner in which the great veins open into the cavity of the uterus that attacks of uterine and crural phlebitis occur so often after delivery, and of which I now show you one of the most striking examples that has yet been observed.

Upon the table is the uterus, and all the veins connected with it, of a woman who died on Monday, the 9th instant, four weeks after delivery, and who had true phlegmasia dolens in both lower extremities, the left having been first and most severely affected. She was under the care of Mr. Brookes, of Bedford Street, and Mr. Jones, Soho Square, and suffered chiefly from great debility, fever, constant sickness, and diarrhoea. I examined the body with Mr. Beck on the 12th instant (the day before yesterday); and we removed all the pelvic viscera, blood-vessels, and nerves, which you now see. There is no trace of peritoneal inflammation about the uterus; and the intestines were perfectly sound. All the veins of the cervix uteri, on the left side, are filled with pus and lymph, and coated with false membranes. The same is the condition of the left internal, common, and external iliac and femoral veins. The coats of the vena cava are greatly thickened as high as the diaphragm, and a rough false membrane adheres to the whole of its inner surface. Within this is a soft yellowish substance, which washes away like a mixture of pus and lymph, with coagula of blood. A quantity of purulent fluid escaped from the vena cava when it was opened near its bifurcation; and at this point there was a firm union between the vein and the last lumbar

vertebra and cartilages. The right common, external, and internal iliac, and femoral and saphena veins, are all destroyed by inflammation, though less disorganized than on the left side. The left spermatic vein, from the uterus to its termination in the renal vein, is thickened and lined with false membranes, and filled with coagula of blood. The liver and lungs contained no secondary abscesses. An incision was made through the integuments and cellular tissue down to the fascia of the right leg, which was most swollen, and a quantity of serum flowed out of the cellular tissue, which appeared quite healthy.

This dissection demonstrates that in this case of phlegmasia dolens the inflammation commenced in the uterine branches of the hypogastric veins, and subsequently extends from them into the iliac and femoral trunks of the affected side.

The absorbents of the uterus and its appendages accompany the spermatic and hypogastric veins. As they are extremely small, and are demonstrated with great difficulty in the unimpregnated uterus, and as I have no preparation to shew them injected, nor have ever seen one, it will be more satisfactory to describe them hereafter with the nerves of the gravid uterus.

CLINICAL NOTES,

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I. ON SOME OF THE MORE UNUSUAL FORMS OF ANEURISM.

Cricoid aneurism of right arm—Operation —Cure.

MURDOCH M'LENNAN, æt. 21, bleacher.

All of the arteries of the right upper limb, especially the larger arterial trunks, are enlarged. The subclavian as high as it can be traced, the axillary, and the brachial, are fuller, larger, and of a much more powerful beat, than natural, — the latter vessel being apparently equal in size to the common iliacs. The pulsation is peculiarly vibratory. The radial artery is greatly increased in size, and tortuous throughout its course. About the middle of the forearm it bulges into a swelling about the size of the point of the thumb, which pulsates more strongly than any other part of the vessel, from the subclavian downwards, with a strong whirling vibratory feel, and a loud rasping soufflet. Its pulsations are distinctly visible, and resemble the action of a small energetic heart. On the same vessel, half an inch from the wrist, is another swelling, as large as a pullet's egg, of an ovoid form, with a somewhat promi-

nent apex. It pulsates throughout, has a loud rasping soufflet synchronous with the pulsation of the radial, from which vessel the tumor cannot be separated. It can be partially emptied by firm pressure on the artery above, or on its apex, and when so emptied its sides have a solid cartilaginous feel, the apex remaining soft. The integument is not discoloured. From this point the radial can be traced in its ordinary course on the back of the thumb, enlarged, tortuous, and presenting characters in other respects similar to those of the brachial. The ulnar artery, in like manner, can be traced in the lower half of the forearm, presenting pathological appearances precisely similar, until it arrives opposite the larger tumor on the radial. It there seems to attain a greater degree of dilatation and tortuosity, extending across the wrist, forming a flattened swelling as thick as the finger, and as large as a half-crown piece, pulsating very violently, and communicating to the ear a loud rasping soufflet. The same swelling, more flattened, and pulsating with less violence, extends along the ulnar half of the palm, and seems to terminate in the slough afterwards to be described. The radial half of the palm, and the backs of the fingers, have the same appearance to the eye as that of the ulnar, but to the touch are devoid of pulsation, with a peculiarly soft semifluctuating feel as if occupied by a congeries of tortuous dilated veins. The integuments are hardly perceptibly discoloured, of a very slight blue tinge, with the exception of three red vascular spots, apparently superficial nævi; one on the palmar wrist, one on the palm, and one on the second finger. Pressure on the radial artery easily commands all pulsation in the course of that vessel, while that in the ulnar continues, and *vice versa*; while moderate pressure on any part of the artery above the bend of the elbow commands all pulsation in the forearm. Pressure on the arteries causes acute pain in the fingers and palm of the hand. Remaining portions of palm of hand, and roots of first and second fingers, are covered by clotted dressings, on partially removing which a foul sloughy surface is exposed. The third joints of the first and second fingers are bent at a very acute angle, beyond which they cannot be extended. The fingers themselves are soft, puffy, with a feeling of superficial fluctuation, painful but not pulsating. The thumb, ring, and little fingers, nearly normal. The veins of the arm are enlarged, and on admission were reported to pulsate feebly. The limb is smaller than its fellow.

Says that the pulsating swellings on the hand and forearm are congenital, and that they have not materially increased beyond the proportional growth of the limbs. The

lower tumor over the radial artery was about the size of a hazel-nut till six years ago, when it was suddenly increased in consequence of a blow, and has since gradually but slowly enlarged. Since childhood has been liable to suppuration and hæmorrhage from the palm, the latter occurring every 3d or 4th month, and easily checked by pressure. Within the last four years the discharge of pus has been constant, and the loss of blood more frequent and profuse. Five days ago the bleeding became unusually profuse, and before it could be checked by pressure, he lost two pounds of blood. Eight hours ago it returned, and he lost about an equal quantity. A tourniquet was then applied, and he was conveyed to the hospital.

On admission he was faint, and the pulse feeble. After he had rallied it was 116, soft. Action of heart strong; sounds are loud and regular. No soufflet detected in any other artery of the body, all of which, so far as can be ascertained, seem of a normal size. The tourniquet was taken off, and he was carefully watched.

March 12th.—By advice of consultation brachial artery was tied in lower third of arm. The vessel was exposed by a very careful dissection, the ligatures passed cautiously round it, and tied in the ordinary way. The artery was as large as the little finger, and its coats very thin. Pulsation in all the parts distal to the ligature immediately ceased. Did not lose two drachms of blood, and bore operation well. Wound dressed on table with strips of adhesive plaster.

13th.—Soon after operation complained of pain in palm of hand; relieved by morphia. Heat of limb quite natural, except fingers, which, however, are very little colder than they should be.

15th.—Points of two first fingers and thumb somewhat livid; veins on back of forearm and hand have the appearance of livid streaks, in which the circulation is going on slowly. A large arterial branch is felt beating on back of arm, and reaches nearly as low as the elbow. Action of the heart much excited, with severe palpitations and slight bellows murmur, most probably owing to reaction following the loss of blood previous to admission. Bowels slow.

Injec. enema domesticum.

R. Tr. Opii, Tr. Digitalis, Sp. Ammon. Aromat. aa. ʒj. Tr. Hyosciam. Nigr., Vini Antim. ʒij. Aq. Cinnam. ʒv. Sum. ʒj. ter indies.

22d.—The palpitations ceased, the appearances of gangrene on the fingers and thumb did not extend, and he continued doing well till the 20th, at 4 P.M. when profuse hæmorrhage recurred from situation of

former bleedings. The house surgeon, and the young men who were assisting him, reported that pressure on the subclavian and brachial had no influence in restraining the flow of blood, which could only be arrested by firm pressure on the bleeding point. Pulsation having returned to the ulnar artery, it was proposed to tie that vessel immediately; but to this the patient would not submit until to-day. The vessel was tied an inch and a half above the wrist, and was found large and very tortuous. Did not lose a tea-spoonful of blood. Compress and bandage were continued to palm of hand.

24th.—First and second fingers sphacelated; point of thumb gangrenous. A livid patch over first phalanx of little finger. Wound of first operation dressed for first time to-day. Ligature came away in the dressings; wound looking well.

28th.—Wound of operation on ulna dressed to-day, and looking well. Ligature came away. First and second fingers dead as low as articulations with metacarpal bone. Other parts of hand as formerly. The apex of the larger tumor on radial discoloured.

May 18th.—Since last report has gone on favourably. The first and second fingers have been removed, and the wound is granulating healthily. The gangrene of the thumb did not extend beyond its point, which has not yet separated. One or two of the articulations of the ring and little fingers were opened by the separation of the sloughs, the projecting ends of the bones were snipped off with bone forceps, and the parts are now looking well. The apex of the tumor mentioned in last report sloughed, and several large portions of calcareous deposit were discharged from it, confirming the opinion given of it in the original statement of the case.

General health very good; walks out daily.—Dismissed cured.

September 18.—This young man called upon me to-day. Sloughs have separated from fingers and thumb, and the sores have nearly healed. Can now move thumb and little finger, but not ring finger. Sore left by removal of two first fingers has not yet healed, but presents an indolent ulcer about half an inch broad by an inch long. Palm of hand fully more soft and flaccid than when he left the hospital, and pulsating obscurely. No pulsation to be felt in any part of ulna; radial artery pulsates feebly throughout; smaller swelling on this artery about middle of forearm still exists, but smaller, and pulsating mildly; ulcer left by breaking up of larger swelling has cicatrised; anterior inter-osseous is felt very obscurely, if at all. Brachial at bend of arm is enlarged, but does not beat strongly; it is obliterated for an inch at the point where it was tied, a branch

is found to beat in its immediate neighbourhood, and the vessel formerly noticed on the outside of the arm continues still of considerable size. The axillary and subclavian arteries are as large as they were on admission into hospital. The latter of these vessels has an approach to a double sound, heard most distinctly when the patient is in the erect posture; when sitting, the second sound has none of the bellows murmur. The heart, carefully examined, was healthy.

This case, of confessedly a rare disease, more particularly in the extremities, appears to me worthy of being recorded. So far as I am aware, examples occurring in the extremities were first published by Breschet, in his excellent memoir on Aneurisms, in the 3d vol. of "*Mémoires de l'Académie Royale*," for 1833. His first case (p. 138) is, in many respects, a complete counterpart of M'Lennan's. It was in the right arm, and the increased diameter of the brachials, with the tortuosity of the vessels of the forearm and hand, so much resemble M'Lennan's, that Breschet's first plate gives a very accurate representation of the state of the arteries in M'Lennan. It differed from it in this, that there was no hæmorrhage, no necessity for operation, and that the existence of the disease was only ascertained on dissection. Breschet's second case (p. 140) was on the right thigh and leg. The femoral artery was tied; partial gangrene, suppuration, and death, followed. Allusion is made to a third case, in which the iliac arteries were found dilated and tortuous, by Cloquet in 1816. In a fourth case, the disease existed in the inferior extremity; frequent hæmorrhage from an ulcer required interference; ligature of the femoral was deemed improper; amputation was performed, and the patient died (p. 183).

So far, then, as these cases go, they offered very little encouragement for the performance of an operation. In M'Lennan's case surgical interference was absolutely necessary in order to prolong his life. At a consultation several measures were canvassed, but I decided on tying the brachial above the elbow, as offering the greatest number of advantages. The success was, perhaps, greater than I had any reason to anticipate, for although the disease cannot be said to be cured, its progress has been arrested, the lad's life placed beyond immediate danger, and his limb preserved. So far as one case goes, it establishes the propriety and safety of tying arteries in similar cases, and it shows that there is no necessity for going so far from the disease as to enable us to tie a sound part of the vessel. At both the points operated on the vessels were highly diseased, and, in as far as the operations themselves went, they terminated as favourably as if the arteries had been healthy.

This case throws some light on the origin and nature of this curious arterial disease. It appears to me to go far, in conjunction with some other cases, to prove that it belongs to the same class of disease with nævus, and aneurism by anastomosis. In this case it was congenital, and presented on one limb examples of all the forms of the disease. On the integuments of the wrist, palm of the hand, and fingers, we had the simple nævus, consisting of a varicose state of the vascular tissue of the skin. At the roots of the first and second fingers, we had the erectile tissue ulcerated and bleeding most profusely. On the ulnar side of the palm of the hand we had tortuous enlargement, the vessel pulsating violently; on the radial side, we had apparently the same state of parts, but without pulsation; on the vessels of the forearm we had cricoid aneurism with thinning of the coats, tortuosity, and small aneurismal tumors of the mixed kind; and in the brachial, axillary, and subclavian, enlargement of the calibre of the arteries with thinning of their coats, but without tortuosity or aneurismal tumors.

Although these diseases are very probably essentially the same, and arise from the same cause, in a practical point of view it is important to recollect that they occur separately. It is farther of importance to divide them into cricoid aneurism without erectile tissue, and cricoid aneurism with the addition of erectile tissue. The prognosis of these two is different both before and after operations. *Before* operation the two diseases, when combined (and in many instances erectile tissue without cricoid aneurism) are liable to ulcerate, and endanger or destroy the patient by hæmorrhage. Cricoid aneurism without erectile tissue seldom causes hæmorrhage. *After* operation, when the only admissible operation is that of tying the arterial trunk supplying the disease, if the diseases are combined the utmost we can hope for is an arrest of their progress, not a radical cure. Numerous cases prove that, after ligature of the principal artery, cricoid aneurism combined with erectile tissue returns, and may end fatally, whereas ligature of the main artery, or even of the enlarged branches, will probably be found a radical cure for cricoid aneurism alone. I say "probably," not being yet in possession of a sufficient number of cases to prove it.

The *treatment* of the two cases must be different; when in combination it must consist of ligature of the main artery, followed *immediately* by local measures directed against the erectile tissue. M'Lennan's case, with many others, prove the necessity of this combination. In eight days after ligature of the brachial artery hæmorrhage returned, and was only arrested by ligature of the ulna, and local pressure; and notwithstanding

these measures were aided by partial sphacelus, inflammation and its attendant condensation of the surrounding tissues, the disease cannot be said to be radically cured. In the case of Etienne Dumand, as given by Dupuytren, in the 6th vol. *Repertoire d'Anatomie*, the diseases were combined on the side of the head. Erectile tissue existed in the ear, from which repeated hæmorrhage had occurred. The enlarged arterial branches had been tied by MM. Vopulus and Retif, with very partial benefit, before he came under Dupuytren's care, who tied the common carotid: the disease was arrested, but not cured. Pressure was assiduously employed as an adjuvant, but it also failed. These two cases, therefore, besides others I might quote, prove that ligature of the main arteries, aided by pressure, will not cure radically cricoid aneurism and erectile tissue when combined. As to what treatment will avail, I cannot speak from experience, but, in any future case, I would tie, according to circumstances, the main artery on the enlarged vessel, and immediately thereafter attack the erectile tissue by ligature, setons, excision, nitric acid, or any of those measures which experience has shown us are of use in the uncomplicated forms of aneurism by anastomosis, selecting that method which might seem best adapted for the circumstances of the case under treatment. I should be disposed to try numerous setons combined with pressure. It may be asked, why was not this done at first? I may, perhaps, be allowed to say, that my own wish was to have removed with the knife the first and second fingers with a part of the erectile tissue at their roots, immediately after tying the ulnar artery. But, besides that this was disapproved of by some of my colleagues, under the fear (very likely well grounded) that gangrene would attack the wound, the patient would not submit to it.

The treatment of uncomplicated cricoid aneurism should consist, in the early stages, of rest, cold, and moderate pressure. Breschet's first case shews that the disease may exist in all the arteries of an adult limb, and make great advances, without any operation being requisite.

The circumstances which may require operation are, the rapid progress of the disease, or its having attained such a size as to become a source of serious annoyance or inconvenience. One important question, as regards the period for operation, now suggests itself—whether the erectile tissue be ever superadded as a disease secondary to cricoid aneurism? I am not prepared to answer this question with an absolute negative, but am disposed to say that if it do occur it is rare. In none of the cases which I have seen or read does the cricoid aneurism appear to have been the primary, and the

erectile tissue the secondary, disease; whereas the converse very frequently happens, and occurred in the cases of Dumand, M'Lenan, and one related by Mr. Russel*. If this view be correct, the operation may be delayed in uncomplicated cricoid aneurism to a later period than would be safe in the two diseases combined, or erectile tissue alone.

What operation is required in uncomplicated cricoid aneurism? I have no hesitation in replying that ligature of the diseased vessels should always be tried previous to the more serious operation of tying a sound portion of the main artery. I am well aware that a different practice has been adopted, but, it appears to me, with very questionable propriety. I shall here principally advert to two cases (besides M'Lenan's) which occurred in this city. The first was in the practice of the late Dr. M'Lachlan, and is related in the first volume of the Glasgow Medical Journal, p. 81. This case I consider an example of uncomplicated cricoid aneurism. Dr. M'Lachlan says, "Having explained to the patient the possibility of tying the arteries singly, I began by laying bare the temporal artery as it emerges from the parotid gland; but on dividing the fascia-like substance which kept it in situ, it shot forth through the opening in the form of a loop * * * thinner in its coats, and, if possible, more diaphanous than a vein. A ligature was applied to this loop, the wound was dressed with adhesive plaster, and, for additional security, a firm compress and bandage was applied. It was now evident that the vessel was diseased at the point of ligature, and the propriety of tying the carotid aneurism hence became obvious." The common carotid was consequently tied, and the patient died on the fourth day.

It is obvious that Dr. M'Lachlan feared that an artery affected with cricoid aneurism would not bear a ligature, "and could not be trusted to." Subsequent experience has shewn that this fear is groundless. M'Lenan's brachial artery was "as thin and diaphanous as a vein," yet the ligature acted, in every respect, as favourably as if the coats had been sound: his ulnar artery started "in the form of a loop" through the wound of the operation, and was tied with perfect success. In Dupuytren's case all the diseased branches (and, as the operators believed, the external carotids) were tied, without hæmorrhage or untoward consequences. It is therefore by no means improbable that if Dr. M'Lachlan had persevered in his original method of operating, the result of his case might have been more favourable.

The following case occurred in the hospital practice of the late Dr. Auchincloss, of

* LOND. MED. GAZ. 1836.

this city: I give it, abridged, from the Hospital Journal.

Dec. 19, 1838.—Mary Robinson, æt. 23. On upper and anterior part of left temple there is a round tumor, about the size of a pigeon's egg, slightly irregular on its surface, with a soft doughy feel and a strong pulsatory motion. The integuments covering it are of a purplish colour, increased by excitement, and at the catamenial periods. The temporal artery is very much enlarged from the point where it leaves the parotid gland, and the tumor seems mainly, if not wholly, composed of its large convoluted branches. The disease is congenital, and is said to have assumed the appearance of a very small nævus. It did not enlarge much in the early part of her life, but lately it has been gradually increasing, and is attended with acute pain. General health perfect.

July 7th, 1839.—Yesterday the common carotid was tied in the upper part of its course. "The operation was very tedious, in consequence of hæmorrhage from the thyroid plexus of veins constantly filling the wound on removal of pressure, and completely obscuring a view of the vessel. After considerable delay the vessel was exposed, and a ligature passed round it." The hæmorrhage must have amounted to twenty-five or thirty ounces, and was entirely venous, no artery, except a small cuticular branch, requiring to be secured. On the ligature being tightened, the pulsation of the tumor instantly ceased.

26th.—No unfavourable symptoms, with the exception of bilious vomiting, followed the operation; the tumor is flaccid and smaller; the ligature came away to-day.

March 13th.—Three days ago tumor became painful, vividly red on its surface, "and fully as large as it has ever been since admission, but without the slightest pulsation." By cold locally, and saline purgatives, it is now small, flat, pale, and free from uneasiness.

25th.—Dismissed cured.

I saw this case many months after the operation: there was no reappearance of the disease.

I can have no hesitation in saying, that if a similar case were to present itself I would tie the temporal, and not the common carotid; for although the operation was successful, it proved more difficult, more tedious, and of course more dangerous, than this always severe operation usually is. The reason which induced the operators to tie the common carotid was the dread of tying a dilated artery; a dread which I have already endeavoured to show is without foundation.

Varicose Aneurism and Aneurismal Varix.

One peculiarity of these traumatic aneu-

risms, which associates them with the forms we have been considering, is the enlarged state of the arteries. Dr. W. Hunter was one of the first to show that the artery, nearer the heart than the point where it communicates with the vein, is dilated; and Breschet has adduced cases to prove that, in many instances, especially where the disease is in the limbs, the artery below the wound is also enlarged.

To account for this unexpected fact, Dr. W. Hunter and M. Breschet have each proposed theories diametrically opposed to each other. Dr. Hunter thinks it is owing to the passage of arterial blood into the vein; M. Breschet that it is owing to venous blood passing into the artery. Dr. Hunter says, "It is the consequence of the blood passing so readily from the artery into the vein, and is such an extension as happens to all arteries in growing bodies, and to the arteries of particular parts, when the parts themselves increase in bulk and at the same time retain a vascular structure."

On this opinion of Dr. Hunter, M. Breschet offers a very severe criticism, and accuses him of being a bad physiologist, and inconsistent with himself. In opposition to it he gives it as his opinion that the greater number of the peculiarities of the disease, and this one in particular, arise from the passage of venous blood into the artery. During the systole of the wounded artery arterial blood is poured into the vein, and during the diastole venous blood is poured into the artery.

With all due deference, I must say that M. Breschet's theory has less semblance of truth, and is as little satisfactory, as Dr. Hunter's. Its truth seems doubtful, for the following reasons. M. Breschet himself says that the venous blood passes into the arteries of the extremities only, and not into those of the subclavian or carotid. It appears to me that his reasons for this exception are by no means satisfactory. Secondly in Mr. Perry's case of spontaneous varicose aneurism of the femoral, the artery was greatly dilated, and its coats were thinned, but the vein just below the aperture was obliterated at a single point, below which it was again pervious. In this case the obliteration of the vein must have prevented the passage of venous blood into the artery. Thirdly, dilatation of arteries, of the kind we are considering, frequently occurs when there is no admixture of venous blood. In Dr. McLachlan's case it arose from arteriotomy, and in Mr. Russell's (*MED. GAZ.* 1836) from wringing clothes in washing. Fourthly, the blood in the vein must be principally, if not entirely, arterial. That which it gives back to the artery must be of course of the same character, and the admixture of venous blood in the artery,

If it take place at all, must be in very minute proportions. If the systole of the artery fill the vein with arterial blood, its diastole must allow some of that blood to pass back again, and if the valves should be destroyed by the impetus of the arterial blood and the varicose state of the vein, the vein for some distance from the wound will be filled with arterial blood, and the admixture of venous blood with the arterial in the artery be proportionally small. In farther proof, if any be required, that the veins in the immediate neighbourhood of the wound in the artery are filled with arterial blood, I may relate the following case. I give it from a note taken by the young gentleman, one of my pupils, who saw the patient. It is curious, inasmuch as it is the only case I have met with in which a vein in the immediate neighbourhood was opened by venæ-section.

Case of aneurismal varix.—John O'Connor, æt. 32, on the 25th of Feb. applied to me at the Gallowgate Dépôt, where I was then employed as an assistant by the Glasgow Board of Health, in consequence of his having what I considered to be an acute inflammation of liver, for which I deemed it necessary to abstract blood. On exposing the right arm for the purpose of performing the operation, I was struck with the appearance of a tumor situated at the bend of the arm, on its inner or ulnar edge, and immediately over the bifurcation of the brachial artery where it gives off the radial. Upon examining more minutely concerning it, he communicated to me the following account.

About two years ago, when tipsy, he applied to a surgeon in Greenock (who also was a little intoxicated) to have blood drawn. Accordingly, the operation was performed in the median basilic vein over the site of artery which appears to have been transfixed during the operation: he says the wound of the vein healed as usual, and he did not discover anything remarkable for the space of a few weeks, at which time a tumor was observed over the part where the wound was made: this tumor has latterly increased to about the size of a pigeon's egg, at which it has remained stationary this year past. He suffers no inconvenience therefrom; can pursue his usual avocations with as little inconvenience as before the accident happened.

After examining it pretty carefully I unhesitatingly considered it to be an aneurismal varix, and of course, instead of bleeding in that vein which lay over the tumor, as I had intended, I opened the cephalic, when the blood flowed with amazing violence and rapidity, far exceeding that which I ever before witnessed in any other operation, and besides it possessed the characteristic features of arterial blood; so much so, that one of my fellow students, who was standing by,

immediately exclaimed, "you have trans-fixed an artery;" but upon my making pressure below the wound, it was immediately restrained.

Spontaneous varicose aneurism was reckoned so rare at the time Mr. Hodson wrote, that he had neither met with, nor read, of an unequivocal example of it. Several cases have since been published; but as the disease is rare, I may be excused for adding another to the list of recorded cases.

Widow Cameron, æt. 66, Cotter's wife, Inverary. Sept. 6, 1833, she was sent to me for consultation, and at that time presented the following appearances. On under part of neck, towards right side, is a pulsating tumor the size of an ostrich's egg, of a somewhat triangular form, its basis about six inches, extending from outer side of left sterno-clavicular articulation to beyond middle of right clavicle, and its apex nearly in contact with the right ear. The body of the tumor is tolerably firm, somewhat lobulated on its surface, and pulsates most distinctly throughout. Towards its apex, near right ear, a portion the size of a hen's egg projects from the body of the swelling. It is soft, moveable, easily emptied, and has a strong vibratory motion. To the outside of this projection, and towards outer margin of right sterno-mastoid muscle, the integuments have a very distinct vibratory motion, as if a small bird, or insect, were fluttering strongly under them. The stethoscope discovers strong pulsation and bellows murmur throughout the whole tumor; but over the projection and portion of integument just alluded to, the sound is very loud, whizzing, and struck me as very like that of a large old-fashioned spinning-wheel, driven on a wooden floor over-head. When the finger and thumb, or two fingers, are placed on the outer edge of this tumor, and gentle pressure employed, the whizzing noise ceases, the larger tumor distends and becomes firmer, and the sensation and sound are limited to those of simple but strong pulsation. When the pressure is removed, the noise instantly returns, the tumor slackens, and the strong pulsation diminishes. The carotid artery can be distinctly traced outside (towards the right side) of the tumor, at least half-way down the neck. Running along the same aspect of the tumor, I thought I discovered a very large vein (probably the internal jugular) enormously distended towards the angle of the jaw; pressure on it above the clavicle lessened the thrill of the upper part of the tumor. The veins over the tumor are enlarged. The above, she says, is of thirty years' duration, having begun at the lower part of the neck, and gradually but slowly increased upwards. The soft portion near the angle of the jaw appeared about six

months ago, after vomiting and coughing, and is said to be rapidly enlarging. General health good; has had fourteen children. I have heard of this woman within these few weeks; she is still alive, and the tumor is said to be very much as it was nine years ago.

This case, although obscure, appears to me to be best explained on the supposition of its being varicose aneurism between the common carotid and jugular vein. No treatment was deemed advisable, and the result has proved that the advice was sound.

The treatment of these forms of aneurism ought very generally to be limited to palliation, for two very good reasons—1st, because in the great majority of cases the disease is merely an inconvenience, and no operation is required; and 2d, because ligation of the artery is very generally followed by gangrene of the limb. When an operation is decided on, the Hunterian is not applicable. We must ascertain the point of communication between the artery and vein, and tie the artery above and below the opening in it. Breschet seems to think that this method of operating would not be followed so readily by gangrene of the limb as the Hunterian operation; but, so far as I know, this opinion is not based on a sufficient number of facts. The safe rule is, not to operate unless compelled.

CASE OF LARYNGITIS— TRACHEOTOMY.

To the Editor of the Medical Gazette.

SIR,

I BEG to send you the following case of laryngitis (?), and shall feel obliged by its insertion in the MEDICAL GAZETTE.

I am, sir,

Your obedient servant,

GEO. E. STANGER.

Nottingham, Oct. 10, 1842.

H. Bradley, ætat. 9, a delicate-looking girl of strumous diathesis, has for some time past been subject to hoarseness of voice and occasional dyspnœa, which are always aggravated when she takes cold. I could not ascertain from her mother that this came on suddenly, or at any particular period; but she says she has often noticed that, when she catches cold, her voice and breathing are affected.

She came under my care first on the 23d of February, 1842; she was then an inmate of the Union Workhouse of this town, of which I was surgeon. She was breathing with great difficulty,

every inspiration requiring great effort to perform it, and producing a loud croupy sound. She could not lie down in bed, but was obliged to be propped up by pillows. There was, however, but little febrile disturbance; the pulse was not quicker than natural; the tongue was clean, and the skin only moderately warm. The matron of the house having seen many cases of croup, had no doubt that this was one; and knowing the danger of delay, had very judiciously ordered her to be put into a warm bath, and had applied a number of leeches to the throat before I arrived. On carefully examining the symptoms, I came to the conclusion that the case was not one of pure croup. I formed this opinion partly from the absence of any constitutional symptoms commensurate with the urgency of the dyspnœa, but chiefly from the character of the sound produced by respiration. The obstruction seemed to be so immediately at the orifice of the trachea, giving me the idea that the opening was much narrower than it ought to be. I did not carry on the bleeding to any great extent, but satisfied myself with a little saline medicine, attention to the bowels, and keeping the patient warm; and I was pleased to observe that the symptoms gave way in a few hours, without any cough or expectoration. She remained in the hospital a few days, that I might observe her breathing. It never became quite natural, but was attended throughout with a degree of harshness sufficiently marked to attract the notice of any one who might be in the room. I saw her occasionally after she left the hospital, as she still remained in the workhouse, but she did not require any further medical treatment until the 1st of April, when she had another attack, but milder than the one just described. This attack speedily yielded to purgative and febrifuge medicines, and confinement to bed for a few days.

On Wednesday, June the 1st, in passing through the house, I heard this girl talking, and observed to her mother, who was standing by, that she seemed to breathe and talk worse than usual. She replied that she thought she must have caught cold. On the evening of the same day I was requested to see her, but not being at home, my colleague, Mr. Jolland, kindly attended for me.

He found her breathing with great difficulty: each inspiration being attended with a loud, harsh, croupy sound. Mr. J. immediately bled her from the arm, and ordered a number of leeches to be applied around the throat, an emetic to be administered, and calomel to be given every two hours. Mr. J. saw her again in the morning of June 2d; and as there was no amendment, and the blood drawn presented a slightly buffy appearance, he took away about six ounces more blood from the arm, and directed the calomel to be continued. I saw the child about 11 A.M. She was sitting up in bed, breathing hurriedly, and with great exertion, even inspiration emitting a dry, harsh, grating sound: there was scarcely any cough, and no expectoration. Her countenance was pale, and expressive of great anxiety; pulse rapid and feeble; tongue moderately clean.

These symptoms continued without any abatement during the whole of the day and the following night, which was passed without any sleep; for if the child attempted to doze for a few minutes, she would awake in the greatest anxiety, leaning forwards, struggling and gasping for breath. Still there was no cough; and on listening to the chest, which sounded well on percussion, I could discover no bronchitic or other rales, though these, had they existed, might probably have been masked by the loud and stertorous breathing.

Friday morning.—Symptoms not at all relieved; the paroxysms of dyspnœa occurring every hour with extreme violence, during which an experienced nurse expressed her conviction that the child must very soon die. The face was of a livid paleness, and expressive of the greatest agony; the skin was bathed in perspiration; pulse remarkably quick and feeble. The mercury had not affected the mouth.

R. Ammoniae Carbonatis, gr. iij. ; Tinct. Hyoscym. ℥x. ; Mist. Camph. ʒiv. tertiâ quâque hora sumend.

Evening.—All the symptoms seem aggravated; the paroxysms of dyspnœa coming on every 10 or 15 minutes, causing her to jump out of bed in her eagerness to fill the chest with air. Feeling convinced in my own mind that she could not live through the night

unless such a change took place in her symptoms as I was not warranted to expect, and believing that the operation of tracheotomy was the only resource left, I requested the opinion of my friend, Mr. J. Thompson, an experienced and highly-talented surgeon of this town. He at once concurred with me in the propriety and necessity of the operation, as the lungs appeared to be sound, and the obstruction, so far as we could judge, seemed to be situated in the upper part of the larynx.

The child was placed on a table in a semi-recumbent posture, with the head resting on an attendant. An incision was made, about $2\frac{1}{2}$ inches in length, just below the transverse portion of the thyroid gland; the muscles were then separated, and the deep cervical fascia exposed. The trachea being fixed by the fore finger of the left hand, a hook was passed under one of its rings, by which means the tube was brought well into view; a narrow bistoury was next introduced, and carried round the hook, so as to take out a small circular piece of the trachea. A silver trachea tube was then introduced, and confined by ligatures. Some difficulty was experienced in taking out a piece of the windpipe, from the slipping of the hook, especially as the trachea was very deeply situated, and the child was struggling violently the whole of the time.

If I should have to perform the operation again, I should prefer a pair of hooked forceps, as by their means the trachea might be more securely held. There was not a great deal of bleeding during the operation. The breathing was immediately relieved, and the child began to doze; the pulse, which was 156 before the operation, fell to 140, and the countenance expressed less anxiety.

Saturday morning.—Has slept several times during the night, for half an hour uninterruptedly, but is frequently disturbed by coughing up a quantity of bloody mucus. A hissing noise is produced by every inspiration. Tongue brown, and rather dry; pulse 150, feeble; skin hot and dry.

To have beef-tea, with arrow-root. Sp. Ammon. Co. in effervescing draught, with ℥j. Tr. Opii. 3 horis.

Bowels have been freely opened.

Evening.—Countenance anxious; starts frequently in sleep; breathing

attended with loud hissing noise; other symptoms as before.

Sunday morning.—Appearance somewhat improved; has slept better during the night; skin cooler; tongue still brown and dry; pulse 150.

May have a tea-spoonful of port wine occasionally in a little sago. *Continuentur medicamenta.*

On carefully examining the wound a small flap of trachea was perceived, and on every inspiration it was drawn into the trachea, and obstructed respiration. Mr. Thomson therefore laid hold of it with a pair of forceps, and removed it; after which the breathing became much more natural and easy. The tube was not returned.

Monday.—Has slept well, and taken a good supply of nutriment. The wound looks well and is suppurating freely; skin cool and perspirable; pulse 140; bowels open; tongue cleaning.

Tuesday.—Slept several hours successively during the night. Countenance lively; breathing free and easily; pulse 130; tongue clean; bowels open.

Thursday.—Slept well, but seems rather feverish this morning; pulse 140; breathes freely through the wound, which discharges copiously. Takes food willingly.

Friday.—Slight cough and mucous expectoration; in other respects going on favourably.

On closing the wound with the finger and thumb, the patient manifests very little uneasiness, and breathes through the mouth with very little difficulty.

It is needless to occupy the reader's time with a minute detail of the progress of this case towards convalescence. It may be sufficient to remark, that every symptom was favourable, and in three weeks the wound was quite healed up, and the little patient in as favourable a state as she had been before the last attack.

I had her kept in the hospital for several weeks after she was cured, in order to prevent any recurrence of the disease, and directed her dress to be made so as to cover the neck, and preserve it from exposure to cold; and as there was some hoarseness still remaining, I had a blister applied to her neck and kept open. At the same time she took small alterative doses of mercury, with a small quantity of Vin. Ferri to promote absorption and invigorate the general system. She was

discharged from the hospital on the 26th of August, and up to the time at which I write has had no relapse.

REMARKS.—This case presents several points of interest to the pathologist and to the practical physician. My own impression is, that the obstruction was seated high up in the larynx, and consisted of chronic thickening of its lining membrane, narrowing the tube. A very slight additional inflammation sufficed to increase the mischief, and nearly occlude the passage; hence the immediate relief which resulted from the operation, which not only caused the instantaneous alleviation, but allowed the inflamed part to rest and regain its natural condition. The discharge from the suppurating wound would also doubtless materially contribute to produce this desirable end.

I witnessed a somewhat similar case many years ago, in the practice of my esteemed friend and late master, Mr. Ewen, of Long Sulter, during my apprenticeship to him. The patient had long been troubled with dyspnoea, arising from some thickening about the rima glottidis. This at length became so much increased as to endanger the woman's life. She was almost *in articulo mortis* when Mr. E. performed the operation of tracheotomy; but no sooner was an opening in the trachea effected, than the patient, who but a moment previously had been gasping for breath, said she felt as if she were in heaven. This patient perfectly recovered, and is, I believe, now living and in good health.

MR. LEE ON DUTCH MEDICAL INSTITUTIONS.

To the Editor of the Medical Gazette.

SIR,

I BEG to forward a few brief notes on some of the medical institutions of Holland (made during a few days' tour in that country), which may possibly interest some of your readers.—I am, sir,

Your obedient servant,

EDWIN LEE.

170, North Street, Brighton,
Oct. 10, 1842.

There is perhaps scarcely any city—the two large metropolises, London and Paris, excepted—which possesses so many charitable institutions as Amster-

dam. The chief hospital (Binnen Gasthuis) is an old building in the centre of the town, divided into two parts by a canal, and containing upwards of 600 beds, in long wards of from 70 to 100. Those on the ground floor have a tolerably comfortable appearance; but the wards upstairs are mere garrets without ceiling: the bare rafters which support the roof presenting a desolate and cheerless aspect. These, however, are considered preferable, on account of their being better ventilated. At Amsterdam is a school of medicine; there are besides medical and surgical wards of about 40 beds each. The hospital receives acute and chronic cases, which are under the superintendence of a professor of medicine, a professor of surgery (Tilenus), and assistants. During the visit an *infirmier* attends with a large book, wherein are ranged, in printed columns, the formulæ of the hospital—as *pilulæ opiatae*, *mistura demulcens*, &c.: the professor marking the number of the patient's bed opposite to any one of these which he prescribes; extemporaneous prescriptions being comparatively seldom written. The examination of patients is cursorily performed, and auscultation and percussion appear to be but little cultivated. After the visit clinical lectures are delivered. The most common complaints are the various forms of ague, which prevail both in the town and country, as indeed might be anticipated from the aspect of many districts; and in a large proportion of the bodies of those who die from other diseases, indurations of the liver and spleen are found, indicating the general prevalence of ague. Sulphate of quinine, in moderate doses, is the remedy usually employed in the treatment. Continued fevers are likewise at times extremely prevalent; and in certain localities endemic, and speedily fatal. Diarrhœa is a very common complication from the beginning; but ulcerations of the small intestines is less generally met with in post-mortem examinations than is the case in Paris. Depletions by bleeding and purgatives is rarely employed; cooling saline drinks being for the most part prescribed when there exists special indications for more active treatment. Rheumatism is likewise very common. In the acute form, active depleting measures are not usually had recourse

to. Diaphoretics are a good deal used. Colchicum is seldom prescribed in rheumatic cases.

Acute inflammations of the abdominal and thoracic viscera are not of very frequent occurrence, as is the case in other countries, where the air is more dry and sharp, and the transitions of temperature greater and more sudden. Chronic inflammations of the bowels and chronic bronchitis are very common. Occasional local bleeding, nitre, ammonia, squills, and other expectorants, and the application of blisters, are the remedies mostly employed. Nervous disorders, which were formerly very common among the higher orders (which circumstance was ascribed to the too frequent use of tea), at the present time less frequent.

From the comparative absence of carriages in the streets, serious accidents are of less frequent occurrence than in most other capitals. Scrofulous diseases, especially those which affect the articulations, are extremely prevalent; and a ward is appropriated to children affected with these diseases. Iodine is not given in these cases, but local counter-irritation, by means of issues, is most frequently employed; the oleum jecoris aselli (which is likewise very generally employed in Germany in many chronic complaints, but which is scarcely to be met with in England) being administered internally*. Stone, which in former times was considered to be very frequent at Amsterdam, is now but rarely met with. Professor Tilenus states that he has not had more than eight or ten cases within the last thirteen years. Fractures of the leg are treated by pasteboard splints and starched bandages, in simple cases: under other circumstances the limb is placed in a junk. In fractures of the thigh, the extended position is preferred; a splint being fixed on either side of the whole length of the limb. From the number of vessels arriving at Amsterdam and Rotterdam from long voyages, scurvy is not unfrequently met with in the hospitals.

* Mr. Bennet has recently published a work on the use of the Cod Liver Oil.

MIDWIFERY CASE,

IN WHICH THE PLACENTA WAS FOUND
THICKLY STUDDED WITH SMALL
POINTS OF BONE.

To the Editor of the Medical Gazette.

SIR,

IF you deem the following case of sufficient importance, its publication will oblige,

Yours most respectfully,
JOSEPH BELL.

Barrhead, Oct. 13, 1842.

April 24th, 1841, half-past 11 o'clock A.M.—Mrs. S., æt. 22 years, a stout female, a native of the north of Scotland: second pregnancy. Has been in labour since 8 o'clock A.M. Os uteri nearly dilated; head presenting, with occiput to left groin, and is entering cavity of pelvis; the waters are away; pains strong; patient very restless; pulse 70. Her pains continued good, and at half an hour past 1 o'clock P.M. a large female child was born. Five minutes afterwards a pain expelled placenta into vagina, from which it was extracted by the hand. In doing this my fingers were severely pricked. On examining the placenta, I ascertained the cause of this to be a number of small sharp points attached to the placenta. On more minute examination, its uterine surface was found to be covered with a milky-coloured membrane, which was thickly studded with small points of bone, as sharp as pins, about one-eighth of an inch in length, and about the thickness of a fine sewing-needle. On examining the substance of the placenta, it was found completely filled with these points, but they were of a much larger size, some rather more than two inches long; they were running in every direction, ramifying not unlike the air-tubes in the lungs. The umbilical veins presented nothing unnatural; but the artery, at its termination, was partially ossified. No hæmorrhage, but severe after-pains. She had an excellent recovery, and had enjoyed good health during the period of pregnancy.

ON THE DETECTION OF ALBUMEN
IN URINE.

To the Editor of the Medical Gazette.

SIR,

I SHALL feel obliged by your giving the following observations a place in your valuable journal.—I am, sir,

Your obedient servant,
J. W. GRIFFITH, M.D. F.L.S.

9, St. John's Square,
Oct. 15, 1842.

1. *On the detection of albumen in urine.*

The solubility of albumen in nitric acid, as a source of fallacy in detecting albuminous urine, has, I think, been entirely overlooked by writers on urine. The ordinary method of proceeding is to heat the urine to the boiling point, and then to add a few drops of nitric acid, when, if the precipitate be redissolved, albumen is considered absent; if otherwise, it is regarded as present. When the urine contains albumen in large quantity, the appearances produced by its coagulation are so characteristic that they cannot be mistaken: it is only when there is a moderate or small quantity present that any error can be made. The strong acid being generally used, I shall confine my observations to it.

When a few drops of nitric acid* are added to urine† containing a small quantity of albumen, a cloud is immediately formed, which, by agitation, is entirely redissolved: so, after heat, a drop or two of acid added and the fluid agitated, the albuminous cloud disappears; a few drops more added, throw it down again; and a further considerable excess redissolves it. Therefore, the formation of a cloud by heat, which is soluble in a drop or two of nitric acid, is no proof that albumen is absent. The value of the nitric acid test depends entirely upon the proportion added. The mere adding a few drops is not sufficient; moderate excess ought to be used. The quantity of acid required for the above-mentioned second solution is, on an average, at

* Specific gravity, 1.5.

† I suppose the operator to be using about six drachms of urine.

least as much as the bulk of the urine used; so that by always using considerably less than its bulk, this chance of error may be avoided. The cloud of phosphates precipitated by heat is very readily dissolved in a small quantity of acid; and by adding a few drops more it is not again precipitated. This, then, would readily distinguish the phosphates from albumen.

2. The following is an account of a crystalline urinary deposit, differing essentially from any hitherto described. It was passed by a patient in St. Bartholomew's Hospital, who is 32 years of age, and has a large hepatic tumor, with anasarca and ascites. The crystals have only been found once, although the urine has been continually examined for a considerable period. They are four-sided flattened prisms with dihedral summits, and possessing a curious internal structure. They were entirely dissipated by heat; soluble in nitric and muriatic acids, solutions of potassa and ammonia; insoluble in water, alcohol, ether, and acetic acid. After solution in dilute nitric acid, and evaporation, no pink residue was left: the solution in ammonia gave no crystals of cystine by evaporation, nor did the crystals contain any sulphur. The urine which contained this deposit was acid, of a deep brownish amber colour, containing the ordinary proportion of mucus; sp. gr. 1.037: contained great excess of urea; no bile. The urine passed since that time has continued diminished in quantity; of the same dark colour, contains a deposit of lithate of ammonia, with great excess of urea; so that on standing for two or three hours, a portion of carbonate of ammonia is formed, which causes the urine to effervesce with an acid, and to contain a copious precipitate of triple phosphate. The lithic acid obtained from this urine by nitric acid is almost black; and on the addition of an equal bulk of nitric acid the urine turns of a very deep colour.

N.B. Since this was written, the patient has died: the liver was found very much enlarged, weighed fifteen pounds, and contained an enormous quantity of melanotic deposit.

ON DISEASES OF THE BRAIN.

By E. COPEMAN, M.R.C.S.

(For the *London Medical Gazette*.)

IN the number of the LONDON MEDICAL GAZETTE for Dec. 25, 1840, I published a paper on the treatment of certain diseases of the brain, in which I ventured to express an opinion that the common method of treating apoplexy by large bleedings was injurious. From subsequent study and observation, I am still more convinced of the impropriety of the general practice, and feel assured there is a greater chance of restoring apoplectic patients by treating them according to the principles advocated in the paper alluded to. The first case there published was that of a gentleman upwards of 70 years of age, who had suffered and recovered from three successive fits of apoplexy, the last occurring in May 1840. On the 2d of February, 1841, this gentleman was again attacked with vertigo, followed by insensibility of at least half an hour's duration. He was roused a little with strong hartshorn, and made to swallow an ipecacuanha draught as formerly, which produced vomiting and a gradual return of sensibility. His bowels were afterwards kept free with senna draughts, and he recovered in a few days. On the 24th of Dec. in the same year, he was again attacked in a similar manner; but although the same means were effectual in removing the apoplectic symptoms, he was left weaker for a month or two than he was before his illness. I attended him again in May 1842, for a cold and sore-throat, from which he soon recovered; and by the help of mild tonics and aperients he became as well as usual. On the 15th of June, 1842, I was called up early in the morning to see this patient, who had been suddenly attacked with loss of sensation in the cheek and limbs of the left side. He was sensible, although somewhat confused and alarmed. No pain or uneasiness in the head; pulse not very steady, and I discovered a hardness in the artery indicative of approaching ossification; no loss of motive power in the limbs. He took his usual emetic draught, but it did not act; afterwards, aperient

medicine, keeping to his bed. By the use of these means, and rubbing the affected parts with strong liniment, sensation was restored perfectly in the shoulder, arm, and thigh; imperfectly in other parts. Power of moving the limbs perfect, and in a few days he was able to get down stairs. At the present time, the only parts in which the sensation is not perfectly restored are the left cheek and the left hand. He complains of this hand being generally cold and stiff, although it is of equal temperature, and as perfect in its movements as the other. He is certainly more feeble, and generally feels languid and faint after breakfast, but he takes a dose of tonic medicine daily at 11 o'clock, and is pretty well during the rest of the day. A few days since, he complained of slight vertigo and double vision the morning after a journey of 22 miles, but rest and careful diet soon removed the symptoms.

Is not the case of this gentleman one of unusual occurrence, and full of instruction? Five attacks of apoplexy (some of no little severity), then one of anæsthesia, and the patient, although feeble, enjoying as much health as most men of his years! Can there be any doubt but that the only way to prolong his life is to support his nervous power? Can there be a doubt but that the usual treatment by bleeding would render his attacks fatal? And yet he is corpulent, short-necked, apoplectic-looking, with a good appetite, capacious stomach, and generally a good pulse.

CASE II.—Mrs. A. æt. 41, of exceedingly nervous temperament, and easily-excited circulation, stout, and scarcely ever taking exercise, was attacked in the morning of Friday, Nov. 20, 1840, with pain in the muscles of the neck and back of the head. Directly after a light dinner, eaten without appetite, she saw an unnatural brightness before her eyes, soon followed by loss of vision and numbness in the right side. She then lost the power of speech, the right leg and arm being cold and paralytic. I was soon on the spot, and found her sensible and making attempts to speak. The limbs were numb, and she was not able to close the hand. Pulse frequent, but compressible. I ordered her feet to be

put into warm water, and the following draught.

R Inf. Sennæ, ʒj. ; Magn. S. ʒij. ; Sp. Lav. c. Tr. Jalap. aa. gttss. xxv.

At 10 P.M., she had vomited three times, and the bowels had acted once. She had regained the power of articulating, and moving the limbs, but felt "very ill."

Empl. Lyttæ Nuchæ.

21st, 9 A.M.—Has had no sleep, and complains of soreness in the scalp. Limbs not paralytic; speech more perfect; pulse soft and rather frequent; tongue furred.

Ordered some purgative pills.

6 P.M.—Has been much griped by the pills, and vomited bilious matter twice; bowels acted once since morning; movements of the limbs all perfect; pulse soft; perspired freely after vomiting.

22d.—Pain in the muscles of the head and neck, with great tenderness of scalp. Pulse 72, soft; tongue clean; no fever; no paralysis.

Fotus papav. t. d., and the following draught:—Tr. Colch. gttss. xxv. ; Tr.

Hyos. gttss. xv. ; Mist. Camph. ʒj. iii.

Bowels open.

26th.—Pain in left ear and side of head, superficial and lancinating. Fainted after fomentation, and felt very languid all the evening, but more free from pain: griping and nausea.

Omitt. Colch.

28th.—Better in all respects.

Opiate liniment to the scalp.

This patient soon recovered, without a return of paralytic symptoms.

During the present year (1841), this lady has experienced a similar attack of paralysis, which soon passed off under a similar mode of treatment. I had, some time before her first attack, attended her in an attack of hæmoptysis, and a year or two before she had experienced a severe attack (as I am told) of inflammation of the bowels; which circumstance would probably have been considered indicative of a too active circulation, and have led to bleeding as a proper means of treating the paralytic attack: but I have reason to be glad that I was guided by present circumstances, and not upon any theory

based upon the previous history of the patient.

On the 24th of June, 1842, I was sent for, between 9 and 10 o'clock, to visit this same lady. The message was urgent; and I found her labouring under a fit of apoplexy. She was lying on her back, in bed, with the head stretched out backwards, the skin hot, breathing stertorous, grinding of the teeth, pulse full and resisting. When I touched the soles of the feet she was sensible of it, but I could not rouse her to speak. Pupils dilated, and insensible to the light of a candle. For the last few weeks her servants have observed her to drag the right leg upon the ground in walking. She went up to bed tired and unwell, but had been much as usual during the day. Had been subjected to some mental excitement in the evening. After being up stairs a short time, she rang the bell for the servant, who found her sitting in a chair unable to give her any directions. Soon after, she vomited a little, was assisted into bed, and able to tell her servant she had a great deal of pain in her head, and wished to lie down. Soon after lying down she had convulsive movements in her arms and the muscles of the face. I was immediately summoned, and found her in the state I have described. From the state of her pulse and skin, her age (43), and a feeling that almost any other surgeon would think it right to bleed, I opened a vein, and drew about eight ounces of blood. The pulse rose, was quite free, and became more rapid without losing its power; but the skin cooled, and I determined not to allow more to flow. The grating of the teeth ceased, and I endeavoured to make her swallow some aperient medicine, but as soon as it was in her mouth it excited vomiting, and she ejected some undigested food from the stomach. She now breathed without stertor; pulse of fair strength, and about 80. The vomiting was followed by general perspiration: she attempted to raise herself in bed, opened her eyes, but could not speak. Mustard poultices to the feet were then applied, and I waited a while to watch the effects of the treatment.

At 1 A.M., she was more roused, answered several questions, and expressed by signs a desire to pass urine, which she did in fair quantity. A

second attempt to give her medicine again produced vomiting, and was not persevered in, as she seemed tired, and the skin was becoming cool.

25th, 9 A.M.—Asleep, but breathing slowly, without stertor; pulse much weaker, 72; had been more sensible early in the morning, and had swallowed a pill, which acted on the bowels half an hour before I visited her; countenance pallid; was unwilling to be roused, and very languid; skin warm; frothy mucus in the mouth.

Empl. Lyttæ. Nuchæ. Catapl. Sinap. cruribus. Gave a little barley water, which the stomach soon rejected.

1 o'clock.—Much the same; fresh sinapisms to the feet, the others not having had any effect. Met a physician in consultation, who advised the head to be shaved, and five grains of calomel to be given directly.

7 P.M.—Still drowsy, but sensible when roused; swallowed a draught of Inf. Sennæ and Potass. Tart. Bowels not open; breathing natural; pulse 80; scalp hot. Blisters to the calves of the legs.

26th, 9 A.M.—Removed and dressed the blisters. Scalp hot, and skin warmer than yesterday; pulse 80, of fair strength. Appears conscious of what is being done for her, but cannot articulate; has pain in the head; breathing natural; tongue loaded; no relief from bowels; was raised up in bed, and drank some tea; seemed fired with the exertion. Catamenia appeared yesterday morning.

11 P.M.—Breathing more difficult; but during my visit the bowels were relieved, and the breathing again became free.

27th, 9 A.M.—Skin warm; pulse 86; scalp hot; slight stertor. Swallowed another purgative draught and some barley-water, but with difficulty.

2 P.M.—Bowels relieved again; no stertor; pulse 80, more feeble.

9 P.M.—Blister to left side of the head, where she gave signs of pain. Took three grains of calomel.

28th.—Passed a restless night, and at 5 o'clock A.M. had a violent convulsion: much annoyed by the blister, which I removed. Between this and noon, she had eleven attacks of convulsion; the breathing became difficult; the countenance purple; and the pulse 144. It seemed as if some fresh mischief to the brain had accrued, and

that the case had become hopeless. In the evening, I found she had been free from convulsion for some hours, and had been almost incessantly moving from side to side with all the regularity of an automaton. A little wine and water had been given. The breathing was easier, and the pulse dropped to 100.

29th.—Passed a quieter night, and is more sensible to-day than she has been yet. No relief from bowels; no power of speech; rather more of swallowing; has taken a little wine and water and mutton-broth; skin cool; pulse 70; tongue furred; knows persons in the room; lies in a calm quiet state, with no expression of suffering.

10 P.M.—At 3 o'clock this afternoon the muscles of the face became convulsed, and remained so six hours without interruption, but the limbs were quiet; the heat of skin increased considerably, and the pulse rose to 100; no relief from bowels; breathing impeded. Cold water to the head, and a purgative injection (which soon returned), cooled the surface; the pulse is now 84, and the convulsions have ceased.

30th.—No return of convulsions; more conscious to-day than at any previous time since her illness; swallows better; skin too warm, and face flushed; pulse 80; no relief from bowels. Two injections have been given to-day without effect.

9 P.M.—Bowels freely relieved; was much cooler in the afternoon.

July 1, 9 A.M.—The physician who attended with me was willing to confine the treatment to a repetition of purgative enemata. Pulse 80; more consciousness; no paralytic affection of limbs; articulation and power of swallowing improved.

9 P.M.—Has had two injections, and bowels relieved twice. She is now cool, and gradually improving. Pulse 70, soft; no pain in the head.

2d, 9 A.M.—Slept several hours; breathing quite easy and natural; takes mutton-broth; pulse 80; consciousness and articulation more perfect; bowels relieved twice, the last motion of a healthy colour and consistence; all that had passed previously were dark and offensive: skin cool.

3d.—Slept nearly ten hours. Speaks better; swallows well. Purgative injections repeated daily.

6th.—Improving. Head shaved again.

7th.—Bowels acted well this morning of their own accord.

8th.—Sat up in a chair for an hour. Took a pint and a half of meat-broth, with bread, in the course of the day.

13th.—Injections continued; bowels acting well; pulse 80; skin cool; begins to take solid animal food; is quite sensible, and articulates pretty well.

14th.—Is quite cheerful to-day. Applied caustic for an issue on the arm.

24th.—Got down stairs to-day, and remained there some hours. No paralysis; issue discharging; all going on well.

September 20th.—Is drawn about her garden daily, weather permitting, in a chair upon wheels. Bowels acting; issue discharging; and in every respect as well as before her illness. Catamenia appearing regularly.

In this case the first symptoms of amendment appeared to arise from the vomiting of undigested food; but as a few ounces of blood had been drawn just before, it is not certain to which the improvement was attributable. During the progress of the case I found, that although the heat of skin and flushing of countenance were occasionally very great, the temperature could be reduced, and the force and frequency of the pulse diminished, by very simple means; and that at other times there was a deficiency rather than an excess of action in the system. Cold applied to the scalp, and purgative enemata, always answered the purpose; indeed, the good effects of the injections (composed of senna, salts, castor oil, and barley gruel) were strongly marked, and they constituted by far the most important part of the treatment: and I feel obliged to the physician who attended with me for his forbearance with regard to the use of the lancet, at a time when his inclination seemed to lean towards more depletory measures than those which were adopted. If the patient had been reduced by bloodletting, and had not rallied, her difficulty of swallowing would have prevented food being taken in sufficient quantity to support her strength: what could then have been done to save her life?

[To be continued.]

MEDICAL GAZETTE.

Friday, October 21, 1842.

"Licet omnibus, licet etiam mihi, dignitatem
Artis Medicæ tueri; potestas modo veniendi in
 publicum sit, dicendi periculum non recuso."

CICERO.

THE COLLEGIATE SYSTEM.

WE trust that no apology will be needed on our part for again drawing the attention of our readers to a subject which has already been brought before their notice in this journal. The importance of such a matter is so great as to render it imperative on all who are anxious for the welfare of the rising members of the profession, still more on those who are more immediately concerned in superintending and directing their progress, to give it a fair and careful consideration: and this forms to us a fully sufficient excuse for our recurrence to the subject. It is not a question to be dismissed cursorily, as the mere speculation of a moment which is likely soon to die away, and be no more heard of. On the contrary, there seems a growing probability that it will be carried into effect, and will produce great changes in the whole system of medical education.

A favourable impression of the advantage that might be derived from the application of a Collegiate system to medical education is daily gaining ground, and we may fairly anticipate that medical colleges in London will, ere long, cease to be merely things talked of—mere airy edifices, seen only with the imaginative eye of their constructors, but will obtain for themselves a tangible foundation of substantial masonry. Rumours have for some time reached us that projects of the kind are entertained by the leaders of the larger metropolitan schools, and we find that the chance of their being

realized is, in one or two instances, far from improbable.

We may be pardoned for watching with some degree of pride the growing opinion in favour of the benefit that may arise from the application of this system to schools of medicine, and for reminding our readers of the share which the pages of this journal have had in the origin and progress of this sentiment. In them the idea was first proposed and advocated, and should we be fortunate enough to witness the realization of the scheme, we shall have no small degree of pleasure in reflecting on the influence which the MEDICAL GAZETTE may have had in bringing about an object apparently so desirable.

The importance of the subject to future generations of medical students, and consequently to the whole body of the profession, will be acknowledged by every one who is sensible of the extreme value of the time which is occupied by attendance at the schools in London, after the period of apprenticeship is concluded. The few years thus spent may be considered to constitute one of the most important periods in the life of each medical man. The foundation is then laid upon which the future character is to be built; and the opportunities then enjoyed of acquiring information in the elementary parts of the profession, without a knowledge of which the higher branches remain veiled in comparative doubt and obscurity, can, in most instances, never again be obtained. The station which each one is to take in after life, not only as a member of the profession, but as a member of society, is often, indeed we may say generally, then determined. The stamp of future character is then given—habits of industry and application, or the contrary, are formed; and most men are able to trace the origin and cause of their excellencies and deficiencies back to the impressions

which they at this time received, and to the employment of the time which was then at their disposal. There is a period in the life of almost every individual at which the cast of future character is given; and as Gibbon traced the foundation of his future greatness to the first eighteen or twenty months after his arrival at Lausanne, the medical man is perhaps able to attribute the formation of his manners and ideas to no one period so frequently as to the time spent in *walking*, as it is, or rather was, termed, the hospitals in London.

How incalculably valuable, then, is this time; and how essential that every means should be taken to direct its proper employment. Of the importance of the subject we need say no more: it is of itself sufficiently striking; and we cannot forget the duty which is incumbent upon all, not hastily to reject, but to give a careful consideration to, a proposition, the sole object of which is to promote the better superintendence, and more judicious management, of this time.

That some alteration is required in the course of medical education at present adopted, is, and long has been, the universal cry; and no wonder, when we consider that students are collected together in this great metropolis, and allowed to follow their own devices, without the least superintendence or control being exerted over them, beyond a slight obligation to attend a given number of lectures, &c. They are turned loose into the world, without restraint and without direction, at the very period when guidance is most required. They are exposed to all the evils attendant upon the assemblage of young men, without the compensating discipline which is necessary to maintain any thing like good order. It is a system so evidently wrong that one only wonders at its long continuance. And this laxity, or rather total absence,

of discipline has been attended with a corresponding idleness and looseness of morals. Youths, delighted with this freedom from restraint, are determined to make the most of it; and too often squander away the time allotted for their education in frivolous pursuits, to say nothing of a worse employment of it. Any fears of being "plucked," the only thing likely to disturb their peace of mind, are speedily subdued by the comfortable assurance of the grinder's infallible power "to get them through" with a few weeks' work, and they go on, unmolested and unchecked, in whatever course may best be suited to their inclinations.

We do not pretend to draw this picture as representing the whole class of medical students; but it is, unfortunately, we fear, too generally accurate. The tide does not all flow one way; there are various undercurrents in different directions; and the question comes whether an attempt might not be made, we do not say to restrain it altogether, but to moderate and check it—whether some system of superintendence might not be advantageously had recourse to, a little more effective than that which is at present adopted.

The deficiencies in the present regulations in this respect, which have long been apparent, now become more strikingly so, and more urgently require to be altered. The period of apprenticeship being, in most instances, curtailed from five to three years, and frequently omitted altogether, the students come up to London at an earlier period than they used to do, and consequently are more in need of superintendence. The greater advance, too, of medical science, and the wider range of subjects which it is now necessary to become acquainted with, render it still more important that the time which is to be devoted to the study of the various subjects should be well employed and carefully regulated.

We would not have it supposed that we imagine any charm to be necessarily connected with a College mode of life, or that any benefit is to be the result of the mere assembling the students, and giving them a place of abode, near their hospital. We consider such a plan advantageous chiefly as affording the opportunity for carrying into effect something like a system of discipline. The insufficiency of the present regulations are so obvious, and the difficulty of improving them so great under the present condition of things, that we advocate a Collegiate system as affording the best, perhaps the only, opportunity of restraining the licentious, as well as directing the studies of the industrious.

At the same time we are not forgetful of the fact, that many difficulties and practical inconveniences will be found to attend the assemblage of young men in London, which do not exist, or at least are felt in a less degree, in our smaller University towns of Oxford and Cambridge. The same strictness of discipline, especially with regard to those students not actually resident within the College walls, cannot, it is evident, be maintained, and the same precautions cannot be used to preserve order and regularity. But we are not aware that the difficulty, or even impossibility, of attaining to perfection, is any argument against the attempt to attain to, and enforce, a certain degree of discipline. If it cannot be carried out in its fullest extent, is it therefore to be neglected altogether? Are those persons who have at heart the real interests of the students to stop their exertions because they find some difficulties in carrying out their scheme? The very cause which is an obstacle to perfection forms in this instance one of the strongest reasons for making an attempt to establish a certain amount of discipline.

We are at the same time willing to confess, that there are some positive evils which, it is to be feared, will be found more or less connected with the system we advocate; but these will depend, in a great measure, on the manner in which it is carried out. If it is to be considered merely in the light of a convenient mode of accommodating students, and if the discipline and regulations are to be merely formal, we can conceive the evils to be so great as to render it altogether objectionable. To construct a college, and assemble a number of young men within its walls for the mere convenience of lodging, without subjecting them to authority and strict regulations, would be worse than useless. They had better remain as at present, and be allowed to shift for themselves. But such is not the plan we advocate. We are desirous of promoting the collegiate system chiefly as a means of exercising authority and control over the students, and as affording a means of filling up that important blank which has so long and severely been experienced in the course of medical education.

The system in favour of which we have said thus much is not one to be forced upon the opinions of our readers; it is one for which we merely ask a fair and candid consideration on the part of those who are acquainted with the circumstances in which medical students stand, and who know the difficulties that would attend the practical application of such a system, as well as the advantages which might be anticipated from it. We are glad that it has already received so much attention, and been so favourably esteemed, by those who must be esteemed good judges; and we feel, therefore, the greater boldness in again advocating it. Should it, upon further deliberation, be found impracticable, there will be no reason to regret that the subject has

been brought before the consideration of the profession. Should it, however, as there seems every probability that it will, be found compatible with the position of medical students, and likely to promote their welfare, we shall rejoice in having been the means of promoting so great an improvement in the management of medical education.

THE HOSPITALS OF ITALY.

By DR STRICKER.

THE universities of Padua and Pavia are arranged entirely on the Austrian footing; in the others all the lectures are gratuitous. There is but one course in the year; the vacation consists of July, August, September, and, by an abuse, of October also. To this must be added the numerous holidays, so that the number of lecture-days is often very limited; in Luca, for example, only 143. Hence the time of study is continued pretty long: in the States of the Church, for instance, there is a philosophical course lasting two years, with an examination; then three years' study for surgeons, and four for physicians; and, lastly, two years' practice in the *clinique*, after taking their degree, before admission to the state examination. The practice of physic is more or less governed by three different systems; first, by Rasori's doctrine of contra-stimulus, of which Tommasini is the chief support; by Bufalini's system, who tries to explain diseases by organico-chemical disturbances; and by Pucinotti's, who endeavours to explain them by magnetico-electric disturbances; though the theories of the two last have but little influence on their practice. The treatment is on the whole simple, with much reference to diet: new remedies are admitted with difficulty, so that the *oleum jecoris aselli* (cod's liver oil) is not yet known in southern Italy. Homœopathy has found but few adherents, and hydropathy none. The *cliniques* are partly in the French style, as at Naples and Rome, where they are nothing more than lectures; and partly after the German manner, and at the bedside of the patient. *Polycliniques* [*i. e.* dispensary visits, together with pupils, at the patients' homes] are not usual.

In surgery and midwifery there is a great inclination to the practice of the French, whose principal works are translated into Italian, and whose instruments are used by preference. In the treatment of eye diseases they follow German authors more.

Milan.—The Civil Hospital, *Ospedale maggiore*, is a building one floor high, containing eight courts, which are surrounded by colonnades. It was founded in 1456 by Francis Sforza, and endowed by Carcano in 1610, and by Machi in 1797. Every year, on Lady-day, the portraits of all the benefactors of the hospital are exhibited: they are half lengths, or three-quarters, according to the sums they gave. It contains 2000 beds, and the director is Dr. Caraguti. This institution has its own mill, bake-house, and slaughter-house, which lies in the direction of the Naviglio. It likewise has a small museum of morbid anatomy, collected within these few years. Connected with this establishment are St. Catharine's Foundling Hospital, which receives 3000 children annually, and the Senavra Asylum, containing 300 lunatics; special permission is required to visit either of these institutions. The Hospital of the Compassionate Brethren is spacious and clean, like all which belong to this benevolent order.

Venice.—The numerous small hospitals, which existed in the time of the republic, for single diseases, have been united in the *Ospedale civico*, which is established in the monastery of St. Mark. The director is Dr. Troys. The female lunatics are under the care of Dr. Fassetta, the surgical patients under Professor Rima, the medical ones under Dr. Mengrado. Besides the usual causes of insanity, the pellagra is here an additional one. The institution possesses a very beautiful church, and a small but interesting cabinet of morbid anatomy.

Bologna.—We are especially reminded of the ancient splendour of this university, with which only Padua could compete, by the anatomical lecture-room, adorned with the busts of Mondini, Aranzi, Varoli, and Malpighi, who all taught here, and with the two celebrated flayed figures cut in wood, by Ereole Lelli. The present professor of anatomy is also a Mondini. The cabinet of anatomical wax figures is very old, and distinguished as a work of art, but far less complete than the one at Florence. The cabinet of morbid anatomy also contains numerous wax preparations; and the diseases of the skin and of the organs of generation are represented with particular success. The physical cabinet is exhibited in six rooms; at the entrance is a monument to Galvani. The obstetrical collection is the first of the kind in Italy; it contains embryos from the twentieth day onwards, and a series in wax, representing the normal and abnormal course of pregnancy.

The *Ospedale maggiore o della vita e della morte* is also a military hospital; it is very clean, and usually contains only from 160 to 200 patients, though capable of

holding 800. Here are the *cliniques*; Dr. Cornelli is the director of the medical, Venturoni of the surgical one.

The *Ospedale Sant' Orsola*, in front of the *Porta Sanvitale*, is for chronic diseases; there is one ward for phthisical, and one for syphilitic patients. It is less clean than the last one, and the patients are very irregularly classed. Daveri is the director of the surgical, and Paolini of the medical division: Gualandi is the director of the insane. They have no occupation, and the attempts at cure are therefore attended with little success. Here, likewise, the pellagra is an occasional cause of insanity.

Naples.—In Naples there are three institutions for the study of medicine.

1. The University.

2. The Medical College in the neighbourhood of the *Incurabili*, for 120 young persons, who pay ten ducats a month. They have dormitories, a garden, and a public refectory; are present at the university lectures, and afterwards become assistants at the *Incurabili*.

3. The professors not yet appointed to chairs receive fees, for which they give lectures and hold a *clinique*. To the last belongs the medical *clinique* of Dr. Prudente, which he holds at the patient's bed-side, in the hospital of the *Madonna di Loreto*. Prudente also gives lectures on anatomy in the small lecture-room of the hospital. This hospital contains a collection founded by Pietro Sorrentino, which extends over the domain of mineralogy, botany, zoology, and anatomy. It possesses many wax preparations, *e. g.* the aurantiaceæ, the mollusca (which, however, have their natural shells), the diseases of the eye and the skin, and the varieties of the arteries according to Tiedemann. Giampetri is the director of the surgical division.

The principal civil hospital is the *Ospedale degl' Incurabili*, in an open situation on a small hill at the limits of the old town. It is capable of holding 2500 patients, and has a revenue of more than 100,000 ducats. It contains the university *cliniques*, the medical one, and the surgical one under de Horatiis, where the representations of interesting cases, which are suspended on the walls, cannot be very cheering to the patients; the eye *clinique*, which, since 1822, has been under Quadri; and the obstetric one under Cattolica. The last has 45 beds for pregnant women, two beds for delivery, and an apartment for lying-in women. Besides the wards for patients, which are very large, and built in the form of a cross, the building contains a room for lithotomy; a ward for mercurial frictions; one for phthisical patients; and one which serves as an *hospice* for old incurable ones; in addition to lec-

ture-rooms, an anatomical theatre, a small *clinique* for examination, and an apartment for patients who pay 12 or 18 ducats a month.

Patients who want to be taken in, assemble in the morning in two wards, and are then selected.

The *Albergo dei Poveri*, also called *Reclusorio*, or *Seraglio*, the great building at the end of the *Strada Foria*, was originally intended to be a square, but the front alone has been completed. This enormous poor-house, founded in 1742, contains 2700 men and boys, mostly foundlings, who wear a uniform, and 700 women. In the lower rooms are workshops of different kinds; glass furnaces, a type foundry, a pin manufactory, a forge for arms, &c. The dormitories are airy, and contain from 56 to 128 beds each. The diet consists of bread, soup, macaroni, and wine for dinner, and soup, with bread, for supper; and three ounces of meat on Sundays, Thursdays, and holidays.

In the same building is the institution for the deaf and dumb, containing 32 pupils under the care of Cozzolino, who are instructed in religion, reading, writing, arithmetic, geography, and natural history. The patients of the *Albergo* go to the hospital of *St. Madonna di Loreto*.

Close by is the Botanic Garden, whose director is Tenore, and whose gardener is Denhardt, a Hanoverian. It contains a beautiful *tepidarium* of the Doric order, entirely covered with *Ficus stipulata*; the *caldarium* contains nothing but coffee-trees. The arrangement of the aquatic plants is bad. The plants are arranged in four squares according to Linnæus, and in two according to Jussieu.

The institution for the blind, *St. Giuseppe e Lucia*, on the Chiaja, is arranged after the pattern of the best institutions of the kind. One hundred and sixty blind persons are instructed in reading, music, mathematics, and geography; and they print their books themselves with letters in relief. There is among them an interesting case of *elephantiasis leonina*. The Director is Professor Quadri.

The Naval Hospital is also on the Chiaja; the best wards, which are on the first floor, are occupied by the marines; those on the second, by patients from the galleys.

In front of the Capuan Gate, in the Hospital of Prisons (*San Francesco*) is the anatomical, zoological, and pathological cabinet collected by Naula, formerly Professor of Anatomy. It contains many most remarkable specimens. For example, there is a specimen of quintuplets, four female and one male; they were born at 6½ months, and one lived a quarter of an hour, another

half an hour. There is also an ossified ovary weighing $9\frac{1}{2}$ pounds. The collection, which is elegant but ill arranged, has been bought by the Government, and after the decease of the present possessor is to be transferred to the University. Near it is the hospital called *Sta. Maria della Fede*, for girls of the town; the Director is Giampietri. There is an examination every Wednesday; when cured they are kept a week in the house and observed. The sores are touched with nitrate of silver. When the chief disease is in the glands, the general treatment consists of [mercurial] frictions; when the bones principally are affected, of Dupuytren's sublimate pills. According to the principles which prevail here, the patients have nourishing diet; eleven ounces of bread, with three of meat, four of macaroni, and a tumbler of wine, for dinner; soup, with six ounces of bread, for supper. Schultz's work on the mineral springs of Naples (Berlin, 1837) may be consulted for information respecting the baths of Castellamare and Ischia; observing, however, that the baths of *Torre dell' Annunziata* have already failed.

Aversa.—The first stage on the road to Capua is the little town of Aversa, containing four mad-houses, with more than 600 patients. *Sta. Maddalena*, *Sta. Costina*, and *Capuzzini*, are for men, *Monte Vergine* for women. *Il Reale Morotrofo di Sta. Maddalena* was newly arranged in 1834; the mode of life in it is as follows:—At 7 o'clock the patients rise, and are amused with billiards, occupation in the garden, and music, till noon; their first meal is at 11, the second at 5; then they have a walk in the court-yard, or the pillared hall; and about 7 in the evening they assemble in the apartments. The diet varies in three different classes. The poor receive twenty ounces of bread daily, with four ounces of meat, a bottle of wine, and fruit; and macaroni twice a week. The half boarders, who pay six ducats a month, get two dishes a day; the whole boarders pay double, and get three dishes, and on Sundays and holidays, four.

The principle on which the establishment is conducted is to effect cures by gentleness, combined with strict military discipline. For this reason, the lunatics wear a uniform. Those who pay are distinguished from the poor by coats, the latter wearing jackets; priests have a cross on the breast.

The colour of the cross and of the coat-collar varies according to the species of lunacy; red for the furious, yellow for monomaniacs, white for the fatuous (*stupidi*), green for the epileptic, and blue for the dementes.

All movements are conducted by beat of drum.

Of coercive means the only ones employed

are the strait waistcoat, the dark room, and the coercive bed fitted up with a night-stool and a contrivance for raising the head. There are douche and vapour baths besides the ordinary ones. Those lunatics whose condition permits it, may go out three times a week.

Sicily. Palermo.—The medical and benevolent institutions are here as difficult to be seen as they are easy of access at Naples.

I was not able to get into the *Albergo dei Poveri*, or the *Conservatorio di Spirito Santo*. The Civil Hospital contains 608 beds; Longo is the Director, and the Marchese di S. Giorgio the Administrator. The division for girls of the town, who are also examined here, is not well arranged; it consists of 230 beds, in four wards. They have two ounces of meat and wine daily.

In the *Collegio militare*, or *della Benificenza*, foundlings are made into soldiers.

In front of the town is situated the new madhouse, founded at the instance of Pietro Pisani, who had also written a book on the subject, the *Guida dei Forestieri, per la Real Casa dei Matti, Palermo 1835*. (The Foreigner's Guide to the Royal Lunatic Asylum.) It contained 58 women and 44 men. For the former there are 120 cells, in two stories, those for the unquiet below, and those for the furious above, arranged around a court which contains an enclosed fountain. The men have twenty cells for the furious round a small court; the quieter ones are kept in the building, where there are also rooms for the patients who pay, at the rate of twelve ducats a month. There is a parlour for each sex, where they can converse, under inspection, with relations and friends. One apartment is devoted to weaving. The baths are very beautiful, and the whole building arranged with much luxury. For the amusement of the lunatics the gardens are furnished with allegories [allegorical groups?], caricatures, grottos, temples, and various games, partly constructed by the lunatics themselves. These interested my guide so much that through them I obtained no information on more important points. The coercive instruments used are the strait waistcoat, the dark room, and the hammock. Connected with the institution is a small, but very interesting, collection of the skulls of insane persons. Changes of fortune, and violent mental emotions, during the prevalence of the cholera in 1837, were abundant sources of madness. The botanic garden, under the direction of Professor Tinco, situated near Flora's Walk, is magnificent. The amphitheatre for lectures is built in an ornate Doric style, and decorated with statues of Æsculapius, Hygiea, Flora, Pomona, Ceres, and Abundance. A statue of Paris represented as a herdsman fronts the green-house.

The round basin for water plants is crossed by a complete net-work of small stone bridges, situated partly in concentric circles, partly in their radii, so that it is easy to reach any single plant.

Prince Butera's garden is also botanically interesting; the gardener is a German named Schott.

Besides artistical and antiquarian collections, the University contains the anatomical theatre, and a small pathological cabinet, particularly interesting for its specimens of intra-uterine life. The best known among the Professors is Foderà, the physiologist, who formerly lived at Paris, but was born here.

[To be continued.]

QUANTITY OF CARBON USED
IN FOOD.

THE quantity of carbon consumed, in the form of food, by different individuals, is subject to considerable variation. It is well known that some persons are notorious

among their friends and acquaintances for being great feeders,—while others are commonly known as small eaters. The difference is still greater when we compare the eating powers of the inhabitants of different countries. Whether this depends, as some phrenologists assert, on the unequal development of a particular part of the brain (which they call the *organ of alimentiveness*) I shall not stop to inquire: it being sufficient for the present purpose that the existence of inequalities of appetites among different individuals is generally recognised.

Liebig estimates the amount of carbon daily consumed at $15\frac{3}{10}$ oz. avoirdupois [$13\frac{9}{10}$ oz. Hessian] exclusive of that consumed in the form of green vegetables, &c. His statement is based on observations made on the average daily consumption of food, by from 27 to 30 soldiers, of the Body Guard of the Grand Duke of Hesse Darmstadt, in barracks, for a month, or by 855 men for one day. I have drawn up the following table from his statements, and converted the Hessian weights into avoirdupois weights.

Kinds of Food.	Avoirdupois weight of Food.			Avoirdupois weight of Carbon.		
	lbs.	oz.	grs.	lbs.	oz.	grs.
Ordinary meat containing $\frac{1}{2}$ of fat and cellular tissue	306	4	186	80	14	210
Fat or Lard	3	13	$304\frac{1}{2}$	3	1	$156\frac{1}{10}$
Lentils	3	10	412	}	11	10
Peas	12	12	161			
Beans	15	0	76			
Potatoes	1093	2	357	133	5	$374\frac{2}{10}$
Bread	1923	9	$214\frac{1}{2}$	589	11	$50\frac{1}{2}$
Total for 855 men for one day	3358	5	398	818	11	47
Average for one man for one day . . .	3	14	$370\frac{1}{2}$	0	15	140

In addition to the above, the 85 men consumed,

	lbs.	oz.	grs.
Of green vegetables (cabbages, greens, turnips, &c.)	189	7	$401\frac{1}{2}$
Of sourkroust	110	2	325
Of onions, leeks, celery, &c.	26	11	$203\frac{1}{2}$

Total for 855 men for 1 day	326	6	55
Average for 1 man for 1 day	0	6	47

It also appears, from an approximate report of the serjeant-major, that each soldier consumed daily, on an average, out of the barracks, the following quantities of other foods:

Sausages $3\frac{3}{10}$ oz.	} Avoirdupois weight.
Butter . . $\frac{3}{4}$ oz. & $33\frac{1}{3}$ grs.	
Beer . . . $\frac{1}{2}$ pint	
Bready . . $\frac{1}{10}$ pint	

So that we may fairly assume, that each of these soldiers consumed daily about one

pound (avoirdupois) of carbon. Now if we suppose that while under experiment he neither gained nor lost in weight, what, it may be asked, became of the carbon thus taken in the form of food?

I shall assume, with Liebig, that the carbon of the green vegetables, sourkroust, and onions, was equal to that of the feces and the urine, and shall exclude from our calculation the carbon of the small quantity of food (sausages, butter, beer, and brandy) taken in the alehouse. We have, therefore, to account for the disposal of 15 ozs. 140 grs. avoirdupois (= $6702\frac{1}{2}$ grs. troy) of carbon; nearly the whole of which quantity must have been thrown out of the system by the lungs and the skin in the form of carbonic acid.

Now $6702\frac{1}{2}$ grs. troy of carbon require 17,840 grs. of oxygen gas to yield $24,542\frac{1}{2}$ grains of carbonic acid; and it is remarkable that Menzies estimated the quantity of

oxygen consumed in respiration by a man in 24 hours at 17,625 grs.

Consumption of oxygen in 24 hours.

Cubic Inches. Grs.

Lavoisier and

Seguin . . . 46037 or 15661 (French)

Menzies . . . 51480 or 17625

Davy . . . 45504 or 15751

Allen and Pepys 39600 or 13464

If it be objected that the estimate of Menzies is too high, it may be replied, that the amount of food consumed by the Darmstadt soldiers was perhaps above the average. Each of these is calculated to have eaten $35\frac{23}{100}$ ozs. avoirdupois [32 ozs. Hessian] of bread, and about 6 ozs. avoirdupois, of meat (besides the 3 ozs. Hessian, of sausage) daily. Now in the dietary of the Stepney Union (which, I am assured, is considered to be a very good dietary for paupers) the Poor-Law Commissioners allow only 14 ozs. of bread, and rather more than $2\frac{1}{2}$ ozs. of meat, as the daily supply.

Moreover, the consumption of food, and consequently of carbon, by females, is considerably less than that by the Darmstadt soldiers.—*Dr. Pereira*, in the *Pharmaceutical Journal*.

ANATOMICAL AND PHYSIOLOGICAL OBSERVATIONS ON THE CORDA TYMPANI.

M. GUARINI has lately published a monograph containing some experiments and observations on the functions of this nerve, which has already occupied so large a share of the attention of physiologists.

The author adopts the opinion that the corda tympani is not derived from the cranial branch of the vidian nerve, but takes its origin from the facial. He concludes, therefore, that it is, like the facial, a motor nerve. In the second place, he shows by dissection that the corda tympani is distributed principally to the fibres of the lingual muscle, and he thinks that it communicates a motor power to them.

To verify the justice of this opinion, he performed experiments on animals; striking them on the head, and then quickly making a section of the tongue and the inferior maxillary bone in the mesial line. After waiting till the spasms which affected the muscles had ceased, he implanted one of the needles of a small galvanic pile in the anterior part of the tongue, and connected the other with the nerve whose function he desired to ascertain. He found that, when the hypo-glossal nerve was galvanized, the tongue was moved forwards and backwards,

upwards and downwards, with such rapidity, that the whole organ appeared convulsed. At the same time the muscular fibres in the centre of the tongue remained unmoved.

When the needle was applied to the branch of the fifth pair of nerves no movements of the tongue ensued, nor when the glosso-pharyngeal nerve was touched.

If the facial nerve was galvanized the tongue was carried upwards and backwards, then downwards, then again upwards, at the same time undergoing a sort of vermicular movement from the action of the lingualis muscle; the movement upwards and backwards being due to the contraction of the stylo-glossus, the upper part of which receives branches from the facial nerve by means of the corda tympani.

These experiments were repeated several times with perfect success by M. Guarini, in the presence of his colleagues. It being doubtful how far the vermicular motion of the tongue might be attributed to the action of the stylo-glossi muscles, these muscles, together with the stylo-pharyngei and digastrici, and the hypoglossal nerves, were divided, the head having been separated from the body, and the corda tympani and lingualis muscles left entire. The facial nerve being then galvanized, the tongue was no longer carried backwards, but the vermicular movement continued unimpaired.

The physiological conclusions which the author draws from these experiments are, that the hypoglossal is not the only motor nerve of the tongue, and he considers that by its influence upon the lingualis muscle the corda tympani is subservient to the articulation of sound.

The suggestion that the corda tympani is a motor nerve and derived from the facial is by no means new, though the part to which its influence is supplied has been a subject of much discussion. The above experiments seem to have been conducted with much care, but they are of such a nature as to require repetition in other hands before we can consider the inferences drawn from them to be established.

ON THE SWALLOWING OF SPONGE BY A HORSE.

By MR. GEORGE RICKWORD, Retford.

AN extraordinary case has lately come under my observation of a horse swallowing a piece of new sponge, and which caused not the slightest inconvenience to him, although he did not pass it until nine days afterwards. The case is as follows:—

Thos. Chas. Higgins, Esq. of Survey House, in this county, purchased a six-year-old horse of a dealer in the neighbourhood.

Not being wanted for immediate use, he was turned into a paddock, where he remained a week. At the expiration of that time he was brought up for the purpose of getting through his physic, and was placed in a loose box away from the stables, and put upon a bran-mash diet. Upon the groom going into the box on the following morning, he remarked that there was a peculiar offensive smell, resembling the effluvia from dead rats; and upon removing the faeces he discovered a piece of sponge, the size of an egg, and which explained at once the cause of the stench.

In order to convince himself that the horse had not taken it during the time he was in the box, he examined his stock, and found that he had not lost any; and he is quite positive that the horse must have swallowed it before he was in their possession, because no sponge had been afterwards used where he could possibly get at it. I have the sponge in my possession, and it appears to me to have been a new piece, and in my opinion has not in the slightest degree undergone the process of digestion.

I once met with the case of a horse swallowing a sponge, the particulars of which I sent to you. In that case not a particle was voided undigested, but the patient was ill to an alarming degree. There certainly was a difference with respect to their food: one had been kept upon hard meat for two or three years, and the other upon his natural diet, he having been at grass for some months.—*The Veterinarian*.

METHOD OF STOPPING BLEEDING FROM THE NOSE.

By DR. NEGRIER, of Angers.

THE following case, being one of those reported by the author, will show his method of proceeding.

April 1839.—A chimney-sweep, aged 14, had already lost 200 grammes [six ounces] of blood from the right nostril. The blood was still flowing very fast, the face was flushed, the eyes injected and weeping, the pulse full and soft, the skin warm. I had the boy placed with his head high; then, with the forefinger of the left hand, I compressed the nostril from which the blood was flowing. While doing this I made him lift up his right arm perpendicularly, telling him to keep it so for two minutes: the hæmorrhage had stopped in ten seconds.

M. Négrier relates three other cases, quite similar, where the epistaxis yielded with the same facility to the same remedy; and he might, he says, have considerably increased the number. The following fact induced him to try this plan.

"Some years ago," says M. Négrier, "I cut myself under the nose, while shaving. The blood flowed copiously from this petty wound, and I could not stop it, either with court plaster or by cauterising with the nitrate of silver. By chance, however, I lifted up both my arms at once to reach something, and I saw, to my great surprise, that the flow of blood, which was copious just before, immediately stopped. I lowered my arms, and the hæmorrhage began again; I again lifted them up, and again the blood immediately stopped. In this way I renewed and stopped the flow five or six times, in order to convince myself perfectly that the sudden raising of the arms was really the cause of the suspension of the hæmorrhage. Lastly, I kept my arms raised for one or two minutes; and during this period a plastic crust formed upon the cut, which put a final stop to the hæmorrhage."

M. Négrier has since remarked, that if the cut goes through the capillary vessels alone, the hæmorrhage is not stopped; for this effect it is necessary that the wound should contain some arterial branches of a greater calibre.

Our judicious contemporary, the *Gazette Médicale*, observes as follows upon this plan:—

We shall not undertake any explanation of this fact, which must first be verified; for although the authority of M. Négrier is sufficient to make us admit the mere fact, that is, the coincidence of the raising the arm and the cessation of the hæmorrhage, we cannot admit the influence attributed to the raising the arm, without fresh facts. Nor shall we quote the explanation given by M. Négrier, as it leaves much to be desired in every point of view.

STRUCTURE OF THE LUNGS.

In a paper lately read before the Academy of Sciences, M. Bourguery is of opinion that man and, in general, the mammalia, at the two extremities of their lives, approach the two classes of vertebrated animals which display the two extremes of aerial respiration. In fact, says the author, as adolescence approaches, the lungs, from year to year, present fresh sanguineous surfaces to the air, so that the breathing, by its development, if not by the form of its organs, more and more resembles the respiration of birds. In the old man, in proportion to the advance of decrepitude, the lungs are gradually decomposed into aerial caverns, which diminish the sanguineous surfaces in proportion; so that his respiration, both by its actual volume, and by the alterations of the structure of the organ in which it takes place, resembles that of reptiles.

SCHEME OF MEDICAL EDUCATION.

LET me now, sir, solicit your indulgence, while I submit, in a compressed and connected form, as an aggregate of the modifications I have suggested in our curriculum, a scheme of study and discipline, which I earnestly believe would provide for the public the largest number of efficient medical advisers. It comprises the following points:—

I. It would make the completion of eighteen years of age, and the attainment of certain preparatory knowledge, the indispensable conditions for a candidate's admissibility to the classes of technical study in a medical school.

His preliminary instruction should be tested by a pass-examination in the facts and philosophy of the Natural Sciences, to a certain defined extent; and should embrace an acquaintance with the principles of reasoning, with rudimentary mechanics, and with the definition and axioms of geometry, so far as these bear on the main subjects of the examination.

A voluntary competition for mathematical and for classical honours should also be invited, and the prize-man in each contest (if of sufficient merit) should be admitted to the medical school at a reduced entrance-fee (or gratuitously) with the title of mathematical or classical scholar.

II. A division of each school into two grades or departments, each having, as far as may be, its scope of study, its arrangement of subjects, and its mode of teaching, adapted to the more or less advanced knowledge of those trained in it.

(1.) The discipline of the junior department should extend through a period of fifteen months; and not only should frequency of formal examinations, and a general tone of indirect, or catechetical, teaching distinguish it, but the student's promotion should be made contingent on his proficiency in its curriculum. Descriptive anatomy (including dissections); elementary biology, as the study of life in the general history of its healthy and morbid manifestations, (elements of structural anatomy, physiology, and pathology); general therapeutics,—or so much of the science of medicine as is common to the physician and surgeon, either divested of speciality, or admitting it only for illustration,—with a classification of remedial agents, an account of their modes of operation and their usual employment in practice: these should be the chief studies of the period, and (during the summer which would close it) there might be added an attendance on the out-patient practice of a hospital or dispensary, in order to acquire,

under proper teaching, the method of conducting examinations, of studying symptoms, and of using the minor surgical appliances (*petite chirurgie*): to the same summer might likewise belong the study of practical pharmacy, and of chemical manipulations.

2. The second period of studentship, being that of discipline for professional practice, should be cultivated in this view with strict and exclusive care: during its earlier half, three or four hours in the middle of each day should be given to visiting the wards of an hospital, and to attending the clinical lectures, and the demonstrations of morbid anatomy, which illustrate its practice; and the anatomical studies of the forenoon should take, as much as possible, the form of surgical anatomy. Thus the systematic lectures on the three branches of practice would fall (as indeed they ought to fall, for the student can ill afford at this period to exhaust daylight in the lecture-room) to the evening; but I am inclined to believe that if clinical teaching were constant and efficient, (as in some foreign schools, where it resolves itself into a familiar commentary on each day's visit) it would form an advantageous substitute for a considerable portion of the systematic courses.

During its later months, the same general plan should be followed, with a care to excite the student's personal interest in practice, and to prepare him for future responsibility; the opportunity of attending cases, under proper direction, should be afforded him, and a registry of them required at his hands. Closer observation of particular classes of disease (surgical and medical specialities) should be encouraged, and theses on them invited by the clinical teachers. Courses of lectures on the higher biology (with more abundant adduction of comparative anatomy and of embryology, than belonged to the earliest view of the same subject) and on forensic medicine and hygiene, would likewise engage the student's attention, and complete the circle of his regulated academic training.

III. It should be a leading object, and a characteristic feature, in the whole scheme of instruction, to superintend the pupil's course; not only to inform him, but to ascertain his progress; not only to sketch his route, but to direct its detail. Thus, when his term of pupilage is accomplished, the teachers of his school can certify for him that he "has completed to their satisfaction the course of study and discipline which they recommend:" and I conceive that such credentials, from a well-constituted school, might with advantage be substituted for the more detailed, but far less comprehensive, certificates of the present system.

Thus far the education should be common to all branches of the profession, and in-

different to any special tendency : for, not till this cycle is accomplished, and a sound knowledge of general practice obtained, can any distinction of study be advised, with a view to the pupil's ulterior destination. Whether he propose confining his future practice to medicine, or to surgery, or to obstetrics,—thus far his culture and proficiency should be equal in all: whatever be the intended inclination of his further progress, thus far it should be impartial: let him first be an able and well-proportioned general practitioner, then specialize his studies; it is not by forswearing medical knowledge, but by accumulating surgical experience,—it is not by the absence of surgery, but by eminent skill in medicine, that a surgeon and a physician respectively distinguish themselves.—*Mr. Simon's Letter on Medical Education.*

ANTHRAX PRODUCED BY DISEASED MEAT.

DR. ODOARD TURCHETTI has published several cases of anthrax, caused by the ingestion of diseased meat. It appears that in 1841 an epidemic anthrax of the tongue raged to a great extent among oxen, and the flesh of one of those which had died of it was publicly sold at a low price in the market-place at Fucecchio. The meat did not present any appearance likely to create suspicion.

In some of those who partook thereof, small and very painful tubercles, surrounded with a red areola, or small whitish pustules with a purple or violet coloured circle, gradually increasing in size until they assumed the genuine characters of anthrax, showed themselves on the face, lips, neck, or arms, in the course of from twenty-four hours to three days. In almost all these cases, the slough was separated by an inflammatory process at the end of a week, leaving a more or less healthy ulcer, which was cicatrised speedily by emollient and detersive applications.

In the more severe cases the pustules ran together, and the anthraxal inflammation spread like erysipelas, accompanied by extensive livid swelling of the parts, and complicated with obstinate gastro-intestinal derangement. The sloughs in these cases did not separate for a fortnight, and left an unhealthy ulcer, which was induced to cicatrise with great difficulty. Two aged persons died from the disease.

Children under six years of age, elderly people, and persons of a weakly constitution, were those who were brought under the malignant influence of the poisonous food; persons in the enjoyment of full health and

strength generally escaped. The general symptoms produced were—diarrhoea, vomitings, meteorisation, borborygmi, anorexia, intense fever, subdelirium, prostration of strength, abdominal pains, insomnia, tendency to serous effusions, epistaxis, &c. The employment of emeto-cathartics and active antiphlogistics are said to have proved the most useful auxiliaries in the treatment of this form of anthrax. Convalescence was very protracted.

A young man, named Marraddi, eighteen years of age, twenty-eight hours after having partaken of this food, had an anthrax form on the upper eyelid of the left eye, which caused the mortification of the whole of that side of the face and neck, and part of the chest. The slough came away at the end of a fortnight, leaving an enormous ulceration, which suppurated abundantly and healed very slowly. The antiphlogistic plan of treatment was employed.—*Annali Universali di Medicina; and Provincial Med. Journ.*

ADIPOSE HERNIÆ OF THE ABDOMINAL WALLS.

M. DENONVILLIERS presented to the Académie de Médecine the abdominal parietes of a woman, in whom had occurred one of these adipose herniæ which are formed external to the peritoneum, and project through some aperture in the linea alba. In this case the fatty tumor presented the peculiarity, that it passed through the umbilical aperture in such a manner as to merit the appellation of an umbilical adipose hernia; and, sometimes projecting in front, at others receding behind the abdominal wall, it closely resembled a true hernia of intestine or epiplocele.

One circumstance in this case of peculiar interest was, that the patient was attacked with peritonitis, under which she sunk. She was not seen at the commencement of this attack, and it simulated the symptoms of strangulated hernia, in such a manner, as to induce many persons to believe that there actually existed a strangulated umbilical hernia. Examples are recorded in which this mistake has been carried to such a degree that the operation was performed. M. Denonvilliers was not, however, deceived by these appearances, and predicted before the death of the patient, the existence of some tumor of this nature, together with peritonitis. He could not reconcile the idea of a strangulated hernia with the persistence of symptoms. At least, the strangulation by the neck of the sac and the reduction *en masse* of the hernia and sac into the abdomen, together with the cause of strangulation, he thought to be very improbable in a

situation where the peritoneum is so closely connected with the abdominal walls.—*Séances de l'Académie de Médecine.*

[The latter observation is in accordance with the investigations of M. J. Cloquet upon this subject, who having accomplished the reduction *en masse* in twenty cases of hernia on the dead subject, states, that it is most easily effected in internal inguinal, then in crural, and lastly in external inguinal hernia, and that he has never succeeded in the umbilical herniæ of adults.—Tr.]

WOUND OF THE INTESTINES CURED BY NATURE.

By Dr. BEYER.

A CHILD, five years old, was apparently suffering from all the symptoms of marasmus to such a degree that the case seemed hopeless. The abdomen was very tense, and poultices were applied to relieve the pain seated in it. After this had been done for several days, a considerable quantity of yellow pus suddenly issued from the umbilicus, on which the abdomen immediately sank. In a few days, undigested and half-digested food appeared in the wound at the navel, which naturally lessened still more all hope of preserving the child. Nevertheless it recovered, after Nature had cured, first, the wound of the intestines, and then the one at the umbilicus; the child is now healthy and strong.—*Caspar's Wochenschrift*, and *Schmidt's Jahrbücher*.

COLD WATER TREATMENT.

To the Editor of the Medical Gazette.

SIR,

A WRITER in the last number of the British and Foreign Medical Review justly remarks, that "Priessnitz is original not in discovering this principle (the use of cold water) but in its application." * * * "By cold bathing alone, if we consult enthusiastic admirers of it, we shall learn that Priessnitz has been anticipated in the cure of gout, rheumatism, all kind of neuralgias, hysteria, and hypochondriasis, fevers, agnes, asthma, and a variety of chronic disorders."—(Brit. and For. Rev. pp. 434, 436.)

I would take the liberty of adding,—and in the treatment of acute inflammatory diseases: I allude particularly to pertussis in all its stages. I have employed cold bathing of the chest in this affection for years, and with very satisfactory results.

This mode of practice was made known to me by Dr. Hannay (Professor of Medicine, Anderson's University, Glasgow) in a course of lectures delivered some ten or twelve years since. I have reason to believe that this gentleman still continues to prac-

tise and advocate this plan of treatment as the most speedy and safe means that has been hitherto recommended in the management of pertussis.—I am, sir,

Your obedient servant,

MEDICUS.

A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, October 8, 1842.

Small Pox	6
Measles	18
Scarlatina	47
Whooping Cough	22
Croup	7
Thrush	8
Diarrhœa	15
Dysentery	12
Cholera	2
Influenza	0
Typhus	36
Erysipelas	4
Syphilis	0
Hydrophobia	0
Diseases of the Brain, Nerves, and Senses ..	137
Diseases of the Lungs and other Organs of Respiration	234
Diseases of the Heart and Blood-vessels	22
Diseases of the Stomach, Liver, and other Organs of Digestion	72
Diseases of the Kidneys, &c.	7
Chilblad	7
Ovarian Dropsy	0
Disease of Uterus, &c.	3
Rheumatism	1
Diseases of Joints, &c.	2
Ulcer	1
Fistula	1
Diseases of Skin, &c.	0
Diseases of Uncertain Seat	92
Old Age or Natural Decay	68
Deaths by Violence, Privation, or Intemperance	19
Causes not specified	5
Deaths from all Causes	848

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude 51° 37' 32" N.
Longitude 0° 3' 51" W. of Greenwich.

October.	Thermometer.	Barometer.
Wednesday 12	from 43 to 55	30.24 to 30.19
Thursday 13	46 55	30.18 Stat.
Friday 14	36 55	30.16 30.15
Saturday 15	47 55	30.20 Stat.
Sunday 16	47 55	30.18 30.16
Monday 17	47 55	29.99 29.69
Tuesday 18	44 55	29.45 29.25

Wind, N., N. by W. and N. by E. till the evening of the 17th, when it changed to W. by S.; on the 18th, S. and S.W.

Except the evening of the 13th, afternoon of the 15th, and morning of the 18th, generally cloudy: .47 of an inch of rain fell on the evening and during the night of the 18th, being the first measurable quantity that has fallen since the 29th ultimo.

CHARLES HENRY ADAMS.

ERRATUM.—In our last number, p. 87, col. 2, erase the 40th line.

WILSON & OGILVY, 57, Skinner Street, London.

THE LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, OCTOBER 23, 1842.

CLINICAL LECTURES,

Delivered at St. Thomas's Hospital,

By FREDERICK TYRRELL, Esq.

Surgeon, and Lecturer on Clinical Surgery, at St. Thomas's Hospital School.

INTRODUCTORY LECTURE.

As one of the surgeons of this hospital, the time has arrived when I should commence my duties in the department of clinical instruction. It was with no inconsiderable regret that I felt compelled, by the obligations of declining health, to confine myself to this less active, but you will hereafter find not less important, sphere of medical education, and to withdraw myself from the lectureship on surgery, which I have long had the honour and the pleasure to hold in this school. But if this retirement, with its attendant circumstances, tend only to raise within me feelings of regret, no ordinary consolation is given me by the recollection that, in the capacity of clinical teacher, opportunities of ample character will be still left me, to exert myself in the service, and to further the prospects of those who may seek, within the walls of this hospital, the materials by which, hereafter, to render service in the cause either of science or humanity. The inculcation, derived from a treasury of long experience, which it is important to impress upon your minds at the onset of your studies, respects the striking fact that the science of medicine and surgery is essentially one of personal-practical observation. In seeking acquaintance with the varied facts and realities on which its superstructure is reared, it would be an error of the most fatal tendency to anticipate continued, certain, and invariable guidance from any general laws, although they may be dignified under the title of the "fundamental principles of the science." These laws do not participate in the definiteness and ex-

actitude of those which constitute the bases, and regulate the demonstrations, of astronomical, chemical, mechanical, and other departments of physical science. Until, therefore, the principles on which the practitioner conducts the treatment of disease be exalted to the certitude of invariable laws, the purity of science would be violated if a place were claimed for them under its denomination. Let not these remarks, however, shake your faith in the resources and capabilities of our profession. The experience of observant men, the sagacity and genius of the numerous philosophers whose names render memorable the annals of medicine and surgery, have wrought out, and masterly moulded into available forms, from the chaos of recorded facts, and cases, and experiments, a code of useful and practical rules, which are to the student in our profession what the laws of matter are to the chemist, or the axioms of geometry to the astronomer, or the theorems of algebra to the theoretical mechanic. It becomes your special duty, therefore, to familiarise yourselves with these rules, in order that in the future management of disease you may interpret facts, establish diagnoses, and sketch the scheme of treatment, in accordance with their spirit.

Before commencing the study of disease and its treatment, it is essential that the pupil should possess at least a general, if not an accurate, knowledge of anatomy, physiology, chemistry, materia medica, and botany, which may be termed the elementary departments of medical science: we presume, therefore, that those who attend to our practical instructions possess such information, or they will find our observations of little value.

The right method for the prosecution of a practical course of study resolves itself into two divisions, of which one consists in the careful perusal of books and attendance upon lectures, while the other requires the positive observation of disease, and the per-

sonal examination of cases—both leading to the same important end, the knowledge of elementary principles. These two methods of attaining the same ultimate objects are, notwithstanding, radically different; for in character and practical value, the information obtained in the two cases is actually dissimilar, although known under the same name. For illustration, let it be supposed that a student learns in books that the signs or conditions of disease *a*, *b*, *c*, and *d*, if they present and combine in certain relative proportions of intensity, would produce a result which may be called *f*, or the compound of the signs; it is quite easy for the student to understand that if the same combination of these signs, under a precise similarity of circumstances, occur upon a second occasion, the same resultant would arise: *calor*, *rubor*, *tumor*, *et dolor*, if they are exhibited simultaneously by any given part, may be regarded, in all instances, as certain indications of a fifth condition, which is known under the term *inflammation*. It is evident, then, that such a proposition as this is purely abstract in its character, and the knowledge obtained is essentially theoretical. But suppose that he acquaint himself further with the sub-signs of *a*, *b*, *c*, and *d*, that he make these signs objects of intimacy to his senses; so that if *a*, or *b*, or *c*, or *d*, were afterwards to be met with either separately and singly, or in different proportional relation to the others, its value as a manifestation of disease would be at once and correctly estimated. But all the deviation from the unit or principle from which we have started could only be determined and recognised by the thoroughly practical student; by him who knows, to speak algebraically, not only the respective values of these several signs, but also the properties or characters by which each may be distinguished. Well, suppose that he informs the "book student," who is as well aware as himself that the concurrence of the signs *a*, *b*, *c*, and *d*, make up inflammation as their necessary product or sum, that in a second case, the sign *a*, or the *calor*, is almost entirely wanting, as well as *d*, or *rubor*, he would be able very accurately to draw the negative inference, that, at all events, it was not one of *inflammation*. But this would go but a short distance in the path of analysis: his difficulties would begin to increase in his attempts to extend his acquaintance with the case. But from the same point of apparent perplexity the course of the truly practical and observant student would appear at once clear and definite: he would promptly proceed to analyse the characters of the two remaining symptoms, *tumor* *et dolor*: he would ascertain with exactitude what sort of swelling it was, what its anatomical dependencies, what the pecu-

liarities of the pain—was it lancinating, throbbing, continued or intermittent, deep-seated or superficial: thus he would work out the nature, as well as seat, of the disease, determine its malignity or non-malignity, whether it had its origin in the osseous or soft structures of the part. Gentlemen, learn from the picture of this hypothetical, but frequently-occurring case, which I have drawn to your contemplation, the all-important fact, that the desirable qualities of *facility* and *accuracy* in the formation of diagnosis, soundness of judgment in the management of disease, can be attained only by a persevering and well-directed course of bed-side observations—learn from the details of this imaginary case, to estimate rightly the value of clinical instruction. It should never be forgotten that implicit dependence cannot be placed upon the guidance of general principles. In this respect the bases of medicine and surgery are still unstable and insecure; the conclusions of the diagnostician, therefore, cannot as yet attain the standard of certainty and infallible precision. There is, notwithstanding, a system or plan of investigation recognised as the right pathway for extending the boundaries of medical science, a plan which the greatest physicians have pursued with success; it consists in following out each fatal case through the full details of post-mortem examination; let the evidence of this last practicable process correct or verify, improve or modify, the diagnoses previously pronounced. Thus the mind will be furnished with valuable and important material for the formation of a sounder diagnosis, or a more accurate judgment, on any future and similar occasion. It is remarkable that students, at all periods, have under-estimated the importance of that species of information obtainable by personal attendance at the dead-house. This consolidates and renders permanent the knowledge accumulated in the wards. In this, as well as in all large hospitals, persons of competent learning in the principles of disease, and adequate acquaintance with general pathology, are always appointed to conduct the inspection of the dead, in order that the inquisitive student may have every facility and assistance afforded him in the solution of difficulties, and removal of obstacles, by which his progress may be retarded. Let me, then, express my sincere hopes that you will desert no case, however common its character, at the dissolution of the patient; "the last scene of all" should never fail to excite within you a philosophic anxiety to test the accuracy of the opinions which the attending physician or surgeon may have delivered during his walks round the ward. This is the course by which labour, industry, and talent, have amassed the folios of facts and cases out of which the principles that

rationalise the practice of our profession have eventually been developed. Let me present you with this important lesson in a direct, and probably more impressive form, by narrating the circumstances of a case which, many years since, occurred to the late Dr. Chomely, of Guy's Hospital. A young woman was brought under his care at the hospital. Her chief complaint was that of severe and continued headache. The state of the bowels and stomach, although not considerably deranged, induced Dr. Chomely to conceive that the affection of the head was sympathetic with the disorder of the stomach and bowels: he accordingly addressed the treatment to the relief of these parts. By the advice of his colleagues, however, who regarded this striking symptom of pain as consequent upon disease in the head itself, the temporal artery was opened, and blood removed to fainting. As he expected, this step brought with it no relief to the head. In consequence of the slipping off of the bandage, however, during the night, a considerable quantity more of blood was lost; so that the patient was reduced to a condition of extreme weakness and exsanguined appearance, the tongue and prolabia being perfectly white. On his visit in the morning, Dr. Chomely found that the headache was entirely gone, and he began to think that his original opinion as to the nature of the case was incorrect; but before reaction was fully established, the headache returned with unsubdued severity, and within a comparatively short period the patient sunk from pure exhaustion. Dr. Chomely, with an ardour of inquiry which eminently and long distinguished his labours in the cause of science, as unwilling to confide in as to relinquish his first idea of its character, sought, in the examination of the body, the settlement of all doubts, and the correction of all errors. It was found that an extensive organic disease of the stomach existed, presenting the marks of having passed through a slow and long period of growth. In the brain no evidences of disease were discovered. It was thus, by industriously following out the case to its last stage, that a valuable proof was ultimately elicited of the accuracy of Dr. Chomely's original opinion, and of the error committed by his colleagues. The history of a case so complete as this teems with instructive details; yet the numerous advantages afforded within the wards of this hospital, the regularity with which the post-mortem examinations are conducted, the facilities offered in the plan of clinical teaching now established in this great school, throw open to you all abundant opportunities for filling your case-books with cases as complete in history, and remarkable in interest, as that which I have pictured to you from the practice of Dr. Chomely. Let me

assure you, by the experience of thirty years, that facts so accumulated will afford you the best and safest pilotage under the perplexities of actual practice.

It is the opportunity of satisfying yourselves in all fatal cases of doubtful diagnosis that renders attendance upon in-door patients so peculiarly valuable and instructive, and which allows the teacher such superior advantages in his efforts to instruct. Each student has the power to investigate, by himself, the characters of the disease; so that, in afterwards collecting to listen to a clinical lecture upon the case, all are furnished with a sufficient knowledge of its history to interpret rightly, and appreciate, the observations of the surgeon or physician. This plan has always appeared to me infinitely preferable to that of making, at the bed-side of the patient, before the eye, and in the hearing of the sufferer, remarks which may aggravate his distress and sink his spirits. Humanity sets her interdict against such a practice; and science by no means requires it.

In reference to the establishment of *correct diagnosis*, there are several cautionary points to which I feel anxious to direct your best attention. There are two modes for obtaining the necessary information on which, in every instance, to found the diagnosis, of which one may be called the *subjective*, and the other the *objective*. These are two distinct methods of conducting the inquiry; and they are designed to elicit two different descriptions of evidence.

Subjective evidence is that which the patient himself deposes. It is the account of his own case which he himself presents; consequently each symptom is measured by his own imagination, and coloured by his fears and timidity, magnified by his fears, or diminished by his unwillingness to believe that a severe attack is approaching. The picture which he draws of his case may be exact and coherent in its details, or it may be artificial and irreconcilable with that to which the surgeon conceives it to belong, from the parts or part affected. It is this absence of consecutiveness in the story, that betrays the counterfeit character of cases which are not unfrequently brought under our observation. But the prompt detection of such attempts at imposition supposes, on the part of the medical man, an available and comprehensive acquaintance with the minute history of every *shade* and *form* which every disease, at all events the recognised affections incident to the part, can assume. Allow me in passing, gentlemen, to awaken your pride of heart and independence of mind to the quagmire of mortification into which a surgeon is reduced when thus misguided by the plausible fabrications of his patient. In your own cases let me entreat you to prevent the possi-

bility of occurrences so stigmatising to reputation as that presented by the following case.

I was called to see a young lady who had been confined to bed, in a recumbent posture, for more than five months; and was informed by her medical attendant that the lady suffered, and was still suffering, from severe disease of the spine at the upper dorsal region; that she had undergone much pain by leeching, cupping, blisters, moxas, &c., and that at present she had two issues at the sides of the spine over the seat of the disease: this plan of treatment had been adopted by the advice of some experienced persons, who had formed the diagnosis above expressed. Careful inquiry and examination soon brought me to the conclusion that there was not any positive disease of the spine, but that the case was one in which, under a highly developed hysterical diathesis, severe and continued local pains had occurred independent of any local morbid action, tending to organic mischief or change. I therefore directed a nutritious diet, exposure to pure air, regulation of secretions, and the use of steel and foetid gum, with the relief from all kinds of local irritation, and in less than five weeks had the pleasure of seeing the patient walking about free from pain, and no longer exhibiting any symptoms of disease of spine.

Objective evidence elicited in the examination of patients, on the contrary, assumes such a precision of character as to make it to the physician what the circumstantial evidence of an eye-witness is to the Judge in a court of law. It is that species of substantive information which is obtained in a given case by direct observation. A patient complains of extreme difficulty in breathing, and of an aggravation of the oppression if he lies on the side opposite to that affected; thus offering a *subjective* account of his case. The physician now, by means of the stethoscope, determines the presence of a fluid in the pleural cavity, a want of resonance on percussion, a bronchophonic resonance in the voice—phenomena which are made direct *objects* of recognition by the senses. A person applies at the surgery for admission to the hospital, on the plea that he has dislocated his shoulder: his arm is removed a little from the side, he complains of some difficulty in approximating it to the body, but not of that severe pain which in the case of the most common dislocation is caused by the pressure of the head of the bone against the brachial plexus, when the arm is brought into parallelism with the side. The suspicion of the surgeon is excited by certain *discrepant* points in the tenor of *this subjective* evidence. He accordingly proceeds to develop the *objective*. The man is undressed, and the shoulder exposed; it is at once observed not to have lost its ordinary contour; the arm

is not elongated; there is no discoverable vacuity underneath the acromion; there is no globular tumor corresponding with the head of the humerus, either in the axilla or dorsum scapulae, or under the clavicle. The surgeon, therefore, from the evidence of facts thus *objectively* gathered, arrives at a conclusion very opposite to that which the subjective narrative would have led him to form. Such a case is satisfactory in illustration of the superior value which attaches to all descriptions of objective evidence, especially when elicited with judgment and intelligence. There are, however, many instances of disease in which the subjective story, related with clearness and precision, most accurately defines the genuine characteristics of a disease. Imagine a case of hydrocele. The patient states that some months since he observed the scrotum to have become slightly enlarged at its lower part, that the swelling acquired an increase of dimensions by enlarging from below upwards, that the swelling was attended with little inconvenience or pain—a picture is thus drawn which at once impresses the mind of the surgeon in reference to the nature of the case; for the sake of greater precision of diagnosis, however, he proceeds to determine the existence of one objective symptom, whether, namely, the tumor is clear enough to transmit the light: this proved, he conjoins it with the narrative of the patient, and views the case as one of hydrocele. In conclusion, then, I may repeat, that the process of inquiry which a surgeon or physician institutes as preliminary to the formation of his diagnosis, should always be conducted with clear and intelligent reference to the two departments of evidence of which I have here endeavoured to convey to you some conception.

In the prosecution of inquiry with a view to accurate diagnosis, there is a question of fundamental import yet to be discussed:—has this affection any dependence upon the general system or constitution, or is it wholly or exclusively confined to the affected part, is a question of considerable consequence to the welfare of the patient in a great variety of cases. Suppose two cases somewhat similar in outward characters, but radically different as regards their pathological conditions—one intimately dependent upon, and regulated by, the state of the general system—the other entirely local: and suppose the same plan of treatment, founded upon the erroneous idea that they were both exclusively local, or both exclusively constitutional, to be pursued. It requires but the plain application of common sense to perceive that, under such a course, while one case would improve, the other would suffer aggravation and injury. Two cases, for example, of ulcer of the leg may come under observation and treatment at

the same time, presenting very closely the same conditions of pain, redness, secretion, swelling, &c., such as would indicate an excess of action; yet in one such an appearance might depend entirely on circumstances influencing the part directly, and would therefore be termed *local*; whilst the same condition in the other case might be no less caused by some disturbed state of the general circulation, or important error in the general functions of the system. It is scarcely required to state, that a course of treatment having reference only to the local, or conversely, to the constitutional, condition, would be as much calculated to injure the one case as to benefit the other.

In forming his diagnosis, the pupil should, as far as possible, endeavour to do so by himself, and subsequently follow out the cases when examined and prescribed for by the

physician or surgeon, and if he finds himself in error, he should seek explanation from the physician or surgeon: thus the knowledge obtained will make deep impression.

Commonly, the pupil is satisfied by following the physician or surgeon, and adopting, without further inquiry, his statements or opinions: the information thus obtained is seldom retained, because it makes little impression at the time. Recollect that our science is still very imperfect, and that the most experienced is liable to err; do not, therefore, rest satisfied until you yourselves are convinced.

I have still a few observations which I consider important to offer to you before I commence my clinical lectures; but I must defer these until I have the pleasure of meeting you again.

REPORT OF THE COMMITTEE ON HOSPITAL STATISTICS.

THE present Report, which has been drawn up by a Committee of the Council of the Statistical Society of London, appointed in December, 1840, "to consider the best means of obtaining periodical enumerations of the patients in the London Hospitals," has been approved and adopted by the Council, and has been ordered to be published in the Society's journal, and to be printed for circulation amongst the supporters and authorities of the various medi-

cal charities of the metropolis. The objects of the Council in appointing the Committee will be sufficiently apparent after a perusal of the Report itself. The Committee is still engaged in inquiries connected with the vital statistics of the hospitals, and will be happy to receive information or suggestions from gentlemen interested in such matters, in furtherance of the purposes of their appointment.

Population of the Hospitals.—The metropolis contains ten general hospitals, besides the fever hospital, the small-pox hosp. the Lock hospital, the hospital for seamen, several lying-in hospitals, and lunatic asylums.

A Return of the Number of Patients in the undermentioned London Hospitals, and of the other Persons belonging to the respective Establishments, or resident on the night of the 6-7th June, (From the return made by the Officers to the Census Commissioners.)

Name of Hospital.	Number of Patients, June 7, 1841.			Number of Persons employed in the Establishment, or Resident on June 7, 1841.			Grand Total.	Deaths in 1839.
	M.	F.	Total.	M.	F.	Total.		
St. George's . . .	178	134	312	10	46	56	368	250
Westminster . . .	68	75	143	6	22	28	171	95
Middlesex . . .	109	103	212	9	36	45	257	156
Charing Cross . . .	43	46	89	6	13	19	108	102
King's College . . .	56	45	101	6	20	26	127	...
University College . . .	56	45	101	9	15	24	125	191
Fever . . .	14	15	29	1	10	11	40	161
Small-pox . . .	15	10	25	2	7	9	34	28
London . . .	205	108	313	11	60	71	384	311
St. Bartholomew's . . .	194	192	386	22	125	147	533	361
Guy's . . .	251	192	443	49	161	210	653	219
St. Thomas's . . .	125	116	241	22	81	103	344	244
Dreadnought . . .	168	...	168	17	9	26	194	110
Total . . .	1482	1081	2563	170	605	775	3338	2231

The lying-in hospitals, Lock hospital, and lunatic asylums, have not been included in the present inquiry.

The population of the hospitals is shown in the preceding table, for the particulars of which we are indebted to the kindness of the Census Commissioners. It must be borne in mind, that the number of patients in individual hospitals fluctuates, and that it is probably not quite so great in summer, when the census was taken, as in winter. With these qualifications the table represents pretty accurately the distribution of patients, and the proportion of males and females in the metropolitan hospitals.

The Dreadnought contained 168 male patients; the hospitals for fever and small-pox (which were not epidemic in June 1841) 29 males, 25 females; the 10 general hospitals, 1,285 males, and 1,056 females.

As a preliminary step, it appeared to your Committee desirable to obtain an enumeration of all the patients in the London hospitals. A circular was accordingly addressed to some of the medical officers who had evinced an interest in statistics; and blank forms were forwarded to all who expressed themselves favourable to the objects of the inquiry. Returns were finally obtained from the Westminster, Middlesex, Charing-Cross, King's College, University College, London, and Dreadnought, hospitals, for

which we are indebted to Dr. Watson, Dr. Burne, Dr. Golding, Dr. Guy, Dr. Walshe, T. Blizard Curling, Esq., and G. Busk, Esq.: who either performed the enumerations themselves, or selected intelligent gentlemen, quite competent to the task.

We were not fortunate enough to procure returns for the first enumeration from St. George's, Bartholomew's, St. Thomas's, or Guy's hospitals, but from the information which we have received, we have every reason to believe that the medical officers and governors of the two former hospitals will contribute to the next inquiry, and we hope that the governors and the medical officers of Guy's and St. Thomas's may be induced to follow their example.

The 7 hospitals from which we have obtained returns, contained 1,127 in-patients, on June 1st, 1842; and 1,214 in-patients in the first week of January, 1842. The increase (7·7 per cent.) may be ascribed to the winter season.

In the 6 general hospitals (the Dreadnought being included), the proportion of males was 57 in 100 patients.

The following was the form of schedule employed in the enumeration; and it will be evident that the number of important heads which it embraces may be classified in a great variety of ways, each of which would furnish important information*.

Name.	Sex. M. or F.	Married, Single, or Widowed.	Occupation.	Age.	Disease.	How long ill before Admission.	How long in Hospital.

The time has not yet come for the final arrangement of the facts, or for the deduction of general results; but in the present stage, we hope to be able to indicate the utility of the inquiry, its general scope, and the important objects which it aims at accomplishing.

Distribution of Sex, Age, and Disease, with duration and results.—For the present we shall omit the Dreadnought, as that hospital is exclusively devoted to the reception of sailors.

The returns show (1.) the number of persons in the hospitals of different occupations; (2.) the number of each sex suffering from the several diseases at different ages; (3.) the period of the several diseases in which patients are admitted; and (4.) the time that they remain under treatment.

The table A. shows the ages of the patients, and their diseases; without distinguishing the sexes, which are, however, separated in the accompanying abstracts. In making these illustrative extracts, the same forms have been employed as are in use for classifying the causes of death at the General Register Office. In the ultimate arrangement, several other diseases, such as those of the skin, will require separate heads.

We subjoin some of the more common diseases, comprising 697 cases, which it will be seen are proportions of the total number of cases of all kinds (1,013) in the abstracts. As few children are admitted into the hospitals, all under the age of 15 are omitted.

* A copy of the form for enumeration, as finally determined upon, will be printed in a future number of the Society's Journal.

Ages of the Patients suffering from some of the more Common Diseases, in the London Hospitals, January 1812.

Diseases.	Ages.										Total.
	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 60	60 to 70	70	
Typhus	3	5	3	1	..	2	..	..	..	..	14
Erysipelas	1	1	1	1	2	3	..	5	..	..	14
Syphilis	15	10	5	7	2	3	1	..	1	..	44
Paralysis	2	3	1	4	1	3	1	5	1	1	22
Epilepsy	6	8	1	1	1	..	..	..	..	..	17
Bronchitis . . . . .	..	5	6	3	3	4	4	10	7	1	44*
Pleurisy . . . . .	..	1	1	..	1	..	..	1	..	..	4
Pneumonia . . . . .	..	..	3	..	..	2	..	1	..	..	6
Consumption	2	9	6	3	8	6	2	2	..	..	38
Diseases of Heart	2	6	3	3	5	2	..	6	1	..	28
Diabetes	1	..	..	1	..	..	..	1	..	..	3
Stone . . . . .	..	1	3	..	..	..	1	..	..	..	5
Disease of Kidneys	1	1	1	2	1	1	1	1	..	..	9
Stricture . . . . .	..	..	1	2	2	1	1	2	1	1	11
Mismenstruation	12	7	4	..	1	..	..	..	..	..	24
Rheumatism	5	13	15	8	12	6	5	12	2	..	78
Arthritis and Diseases of Joints. }	20	10	12	7	6	4	3	2	..	..	64
Scrofula	2	8	4	1	2	1	..	..	..	..	18
Ulcers	4	7	6	5	2	5	8	7	9	2	55
Carcinoma . . . . .	..	1	..	7	1	1	2	3	4	2	21
Wounds, Fractures, and Burns }	20	18	23	25	15	20	14	18	20	7	180

* Age of one person not stated.

General Remark.—The constant number of patients afflicted with any given disease, depends upon its duration, as well as upon the numbers attacked; so that where a disease is twice as long as another, although the same number were attacked, twice as many may be expected to be in hospital. Hence the proportion of cases of different diseases in hospital, and the proportion of cases admitted, will differ in the ratio of the average term of residence. Generally speaking, the proportion of the various cases in hospitals will agree with those of equal severity in the adult population out of doors; but there are exceptions; the diseases incident to childbirth, typhus, and consumption, are rarely treated in the general hospitals, while fractures, wounds, urinary, and a few other diseases, are collected in excess.

An abstract of the deaths, and causes of death, at different ages, in the London Hospitals (1839), was given in the Appendix to the Registrar-General's last report; of which we shall avail ourselves, to show the nature of a few of the results deducible from mere enumerations, and the registers of the causes of death. The abstracts of deaths was derived from all the hospitals, comprising 2½ times as many patients as were enumerated

for us; we shall therefore multiply our facts by 2.5, which will enable us to use them as illustrations. And we may state once for all, that they are to be considered nothing more.

Illustrations.—1. A comparison of the annual number of deaths from each disease, with the average number labouring under the same disease, shows the mortality in a given time (a year), in the various diseases. Thus if there were 95 consumptive persons on an average in the hospitals, 342 died in the year; 360 per cent. in 36½ days, or 1 per cent. daily. A physician who had on an average 100 consumptive patients under his care, in the advanced stage of the disease, may at this rate expect that one would die daily.

It appears that, in the general hospitals of the metropolis, 91 deaths occur annually for every 100 patients which they hold. An hospital which contains 110 patients yields 100 deaths. Let us suppose, for a moment, the patients labouring under consumption, pneumonia, &c. in separate hospitals, each containing 100 patients, the place of the dying being constantly filled up by new patients, then we shall have, according to the last column but one (Table B.), at the hos-

Further Examples—(TABLE B.)

	Diseases.	Died in the Hospitals in One Year. (Reg.-Gen. Report.)	Average Number Sick, (deduced from Table A.)	Annual Deaths per cent.	Constantly Sick to 100 Annual Deaths.
1	Consumption	342	95	360	28
2	Pneumonia	47	15	313	32
3	Apoplexy	39	17	229	44
4	Injuries, and the effects of } Accidents	390	450	87	115
5	Bronchitis	88	111	79	126
6	Paralysis	42	55	76	131
7	Syphilis	13	110	12	846
	All Diseases.	2231	enumerated. 2462	91	110

pital, for consumption, 360 deaths; for pneumonia, 313 deaths; for apoplexy, 229 deaths; for accidents, 87 deaths; for bronchitis and catarrh, 79 deaths; for paralysis, 76 deaths; for syphilis, 12 deaths:—or, according to the last column (Table B.), 100 deaths would occur annually in an hospital for the consumptive, containing 28 occupied beds; in an hospital for accidents containing 115 beds; and in an hospital for syphilis containing 846 beds. The results are obtained with the same facility by the enumeration we propose, whether the diseases be treated in the same or in different hospitals.

An analysis of this kind can be made from five or ten enumerations. It will show, in different diseases, the relative *force* of mortality, which will no doubt be found to be regulated by a determined law.

2. The mortality, in a unit of time, at each age, from the different diseases, may be calculated from the enumeration of the patients, and the registered deaths.

We give the mortality from all causes as an example: the same method may be applied to each disease separately.

Ages.	Actual Numbers enumerated, multiplied by 2.5.	Deaths in One Year.	Annual Rate of Mortality per cent.
20—30	687	449	65
30—40	485	433	89
40—50	355	423	119
50—60	247	312	126
60—70	142	241	170

It has been shown by Mr. Edmonds, and others, that the mortality in the entire population, and in all cases of disease, increases about 34 per cent. (one-third) every 10 years of age after puberty. It appears also, from observations in Friendly Societies, that the sick time increases with age at the same rate;

when it would follow that the liability to an attack of sickness was the same at all ages from 15 to 60; that the duration of attacks increased 34 per cent. every 10 years; that the mortality of attacks increased 34 per cent. every 10 years; and consequently that the mortality in a unit of sick time (a week, for instance) from the same disease, was uniformly the same at all ages (or at least from 15 to 60, to which the observations have hitherto been confined). The enumerations will furnish the means of directly determining the latter point.

3. The tables B. C. show the number of patients *living at every stage* of the different diseases, (so far as it could be ascertained,) at the time the enumeration was made. If the numbers who *recovered and died at the same periods* were abstracted, the rates of mortality and recovery, at the several stages of all diseases, could be determined.

Our information is here deficient; we must refer for examples to other sources.

To render the information complete, a corresponding annual abstract should be made of all the *cases treated*, showing the numbers in each disease discharged, dead, cured, relieved, or otherwise, from all the hospitals.

The great desideratum, viz., the average and inevitable loss of life by each disease, as yet unknown, is obtainable only from such reports of hospitals, &c.—To ascertain the mortality and duration of diseases left to nature, has been considered by some persons a great desideratum. They want this datum, they say, as a starting point. They would determine the average duration, and the number of deaths in 1,000 cases of natural small-pox: they would then compare the results with the results of 1,000 cases treated with all the appliances of medical art; or, according to the various methods of treatment adopted by the medical schools. It is scarcely necessary to observe that the natural mortality and duration of diseases can never be supplied. The thing can never be even contemplated. No

one would dare to suggest that hundreds or thousands of patients should be deprived of the aid, solace, and counsels of medical art; which has been cultivated for centuries by a numerous profession, containing in its ranks many persons of the greatest scientific attainments, and a few men of the most consummate genius. We cannot ask patients to allow the stone to torment them, or to incur the natural risks of loss of blood, unreduced ruptures, broken bones, inflammations, in order to enable speculating sceptics to count how many of them will die.

Without some standard of comparison, however, medical science can make very little further progress. It will be impossible to determine accurately the relative value of different methods of treatment now in use; or of any new remedies and methods of treatment, which may be discovered. Medicine will always be open to unjust charges of inutility, and the public health will be the sport of fashion, the perilous innovations of empirics, and superficial theorists.

It is fortunate, under these circumstances, that the standard required will be furnished by the average mortality and duration of cases *under the present system of treatment*. In the aggregate results deduced from the thousands of cases treated in the hospitals, accidental irregularities will be destroyed; and the average rate of mortality and recovery in each disease, at each stage of disease, will be determined. With this standard any other class of similar cases, treated differently, may be compared. The collection and analysis of a few important, easily observable facts, to which the measures of number and time can be applied, will, it is evident, not interfere with, but will rather facilitate, individual research, or any special

and more extended inquiry undertaken by particular institutions.

The importance of applying the instruments and methods of inquiry which have enriched the exact sciences, to vital phenomena, is generally admitted; and the London hospitals will, it may naturally be expected, take the lead in this as well as in other departments of medicine. Should they act in an isolated manner, and independently of each other, or should they register the observations on a uniform system, and throw them into a common stock, to be arranged in the order which may appear, on due consideration, best calculated to yield the important results to which we have above adverted? The advantages of the latter proceeding, in a statistical point of view, are so obvious, that your committee have invited the medical officers to a conference, and have submitted to them the following propositions:—

(1.) To have authentic registers of cases kept in a form which is now under consideration.

(2.) The first registers to be commenced on January 1st, 1843, and to terminate on the 31st December. To comprise all the patients discharged during the year.

(3.) The first annual abstract to be made under the direction of a joint committee, named by the Council of the Statistical Society, the Boards and the medical officers of the hospital. For this purpose, copies of the registers to be sent, at the end of each quarter, half-year, or year, to the office of the Statistical Society, where it is proposed that the Committee shall meet.

(4.) The Statistical Society will supply the blank forms, for copying the registers of cases.

Example of the mode of filling up the proposed Return.

Disease.—Consumption.

1	2	3	4	5	6	7	8	9	10	11	12
No.	Occupation and Habits.	Sex.	Age.	Number of Days in Hospital.	Duration of case in days.		Date of Attack.	Date of Admission.	When Discharged.		Important Symptoms, Complications, or post-mortem Appearances.
					When admitted.	When discharged.			Date.	State.	
1	Weaver	M.	41	63	65	128	1840. June 3	Aug. 7	Oct. 9.	Died	Hæmoptysis, June 3. Diarrhœa, Aug. 10. P. M. Cavity in upper lobes of left lung; ulcerations of ileum.

The attack should be dated from the first unequivocal symptom of the disease. In the column for important symptoms the date of their origin may be noted.

Contractions used in the Returns.

Int., intemperate; *pp.*, pauper; *M.*, male; *F.*, female. The months, *Jan.*, *Feb.*, *Mar.*, *Apr.*, *May*, *June*, *July*, *Aug.*, *Sept.*, *Oct.*, *Nov.*, *Dec.* The year is written over, and the day under, the month, thus:—
 1831. { *Recov.*, recovered; *conv.*, convalescent; *rel.*, relieved. Other contractions may be used, with an explanation, if necessary.

TABLE 1.—Hospital Cases enumerated in the first week of January, 1842.

Diseases.	Ages.																Total
	1	3	5	10	15	20	25	30	35	40	45	50	60	70	80	?	
Small Pox
Measles
Scarlatina
Whooping Cough
Croup
Thrush	1	..	..	..	1	..	..	..	..	..	..	..	2
Diarrhoea	1	..	..	..	..	..	1	..	..	..	..	..	..	..	2
Dysentery	1	..	..	1	..	..	..	..	2
Cholera
Influenza
Ague
Remittent Fever
Typhus	2	3	5	3	1	..	2	..	..	..	..	..	..	16
Erysipelas	1	1	1	1	2	3	..	5	..	..	..	..	14
Syphilis	15	10	5	7	2	3	1	..	1	..	..	..	44
Hydrophobia
Total	1	2	20	16	9	9	7	8	1	6	1	..	..	..	80
Cephalitis	1	..	..	..	..	..	..	1
Hydrocephalus
Apoplexy	1	..	1	..	2	1	1	1	1	..	..	7
Paralysis	1	..	2	3	1	4	1	3	1	5	1	1	..	..	23
Convulsions	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	2
Tetanus	1	..	..	..	..	..	..	..	1
Chorea	2	..	..	1	..	..	..	..	..	..	..	..	..	..	3
Epilepsy	1	6	8	1	1	1	..	..	..	..	..	..	..	18
Insanity	1	..	..	..	..	..	..	..	1
Delirium Trem	1	..	..	..	..	..	..	..	1
Brain, &c. Dis. of . . .	1	..	3	1	6	2	..	4	2	2	4	1	1	..	..	..	27
Total . . .	1	1	6	2	14	14	3	9	8	7	7	7	3	2	..	..	84
Laryngitis	1	..	..	..	..	2	..	..	..	..	..	3
Quincy	2	..	2	..	..	..	..	..	..	..	..	4
Bronchitis	1	..	5	6	3	3	4	4	10	7	1	..	1	45
Pleurisy	1	1	..	1	..	..	1	..	..	..	..	4
Pneumonia	1	..	..	..	3	..	..	2	..	1	..	..	..	..	7
Hydrothorax	1	..	..	1	2	..	2	..	1	..	..	7
Asthma	1	2	9	6	3	8	6	2	2	..	..	..	39
Consumption	1	..	..	..	5	..	1	1	..	..	..	8
Lungs, &c. Dis. of	1	..	..	..	..	..	..	..	..	..	..	..
Total	1	2	3	19	16	8	13	19	8	17	8	2	..	1	117
Pericarditis	1	..	1	..	..	..	..	..	..	..	2
Aneurism	1	..	..	1	..	..	..	..	2
Heart, &c. Dis. of	1	2	6	2	3	4	2	..	6	1	..	..	..	27
Total	1	2	6	3	3	6	2	..	7	1	..	..	..	31
Teething
Gastritis
Enteritis	1	..	1	1	..	..	..	..	..	..	..	..	3
Peritonitis	2	..	1	..	..	..	..	..	..	..	..	..	3
Tubercles Mesenter	1	1	..	..	..	..	..	..	..	..	..	..	..	..	2
Worms	1	..	..	..	1	..	..	..	..	1	..	..	..	..	3
Ascites	1	..	..	..	1	..	..	..	..	2
Ulceration	1	..	..	..	..	..	..	..	1	..	..	..	2
Hernia	1	..	2	..	1	..	..	4
Colic, or Deus	2	..	..	..	..	..	..	..	..	..	..	..	2
Intussusception	1	..	..	..	..
Stricture	1	..	..	1
Hematemesis	1	..	1	..	..	1	..	..	..	..	..	..	3
Stomach, &c. { Dis. of	5	2	3	1	3	..	..	3	1	..	..	..	18
Pancreas
Hepatitis	1	..	1	..	1	..	..	..	..	3
Jaundice	1	3	..	..	..	1	1	1	..	..	1	..	7
Liver	1	..	..	..	..	..	..	..	..	..	1
Spleen
Total	2	1	13	5	8	4	3	3	1	9	3	1	1	..	54

TABLE 1.—Hospital Cases enumerated in the first week of January, 1842—continued.

Diseases.	Ages.																	Total.
	1	3	5	10	15	20	25	30	35	40	45	50	60	70	80	?		
Nephritis	1	..	..	..	..	..	..	1	
Ischuria	
Diabetes	1	..	..	1	..	..	..	1	..	..	..	..	3	
Cystitis	1	..	2	..	..	..	..	..	..	..	..	3	
Stone	1	..	1	3	..	..	..	1	..	..	..	..	..	6	
Stricture	1	1	2	2	1	1	2	1	1	..	..	11	
Kidneys, &c. Dis. of	2	1	1	1	2	1	1	1	1	..	..	..	..	11	
Total.	3	2	3	5	7	3	3	3	4	1	1	..	..	35	
Childbed	2	1	..	..	..	..	..	..	..	..	..	..	3	
Paramenia	1	12	7	4	..	1	..	..	..	..	..	..	..	25	
Ovarian Dropsy	
Uterus, &c. Dis. of	3	5	6	3	3	3	1	1	..	1	..	..	26	
Total.	1	17	13	10	3	4	3	1	1	..	1	..	..	54	
Arthritis	1	5	1	2	..	..	..	1	1	..	..	..	..	11	
Rheumatism	2	5	13	15	8	12	6	5	12	2	..	..	1	81	
Joints, &c. Dis. of	2	7	16	15	9	10	7	6	4	2	1	..	..	..	..	79	
Total.	2	7	19	25	23	27	15	18	10	8	14	2	..	..	1	171	
Carbuncle	1	..	..	..	..	..	1	..	..	..	..	2	
Phlegmon	3	..	..	1	1	..	..	1	..	..	..	6	
Ulcer	1	4	7	6	5	2	5	8	7	9	2	..	..	56	
Fistula	1	2	1	2	..	..	..	3	..	..	..	..	9	
Skin, &c. Dis. of	2	2	5	7	3	4	6	2	..	1	..	2	..	..	..	34	
Total.	2	2	6	12	16	11	13	5	6	9	11	12	2	..	..	107	
Inflammation	1	1	..	..	..	..	..	..	..	..	..	..	2	
Hæmorrhage	1	..	..	..	..	..	..	..	..	..	..	..
Dropsy	1	..	..	..	..	1	2	..	1	..	..	5	
Abscess	2	..	1	6	2	1	2	..	..	..	..	..	..	..	14	
Mortification	1	..	..	1	..	..	..	2	..	1	..	..	..	5	
Purpura	
Scrofula	1	2	2	8	4	1	2	1	..	..	..	..	..	..	21	
Carcinoma	1	..	7	1	1	2	3	4	2	..	..	21	
Tumor	1	..	..	1	..	1	1	..	..	..	..	..	..	4	
Gout	
Atrophy	
Debility	1	1	..	..	..	1	..	..	..	..	..	..	3	
Malformations	2	..	..	..	1	..	..	..	..	..	..	..	..	..	3	
Sudden Deaths	
Total.	5	4	5	18	9	9	6	4	5	5	5	3	..	..	78	
Old Age	
Intemperance	1	..	..	..	..	..	..	..	..	1	
Starvation	
Accidents, &c. . .	1	..	11	6	20	18	23	25	15	20	14	18	20	5	2	1	199	
Total. . .	1	..	11	6	20	18	23	26	15	20	14	18	20	5	2	1	200	
Diseases not specified.	1	..	..	..	..	..	..	..	1	..	..	..	2	
Total. . .	2	5	35	47	134	151	124	106	88	85	57	99	57	17	3	3	1,013	

The medical officers who did your Committee the honour to meet them expressed themselves quite willing to promote these

important objects. The following resolution was passed.

“Resolved, that application, by letter,

be made to the Boards of the hospitals respectively, on the subject of the adoption of uniform methods of registering of cases, and that the sanction and support of the medical officers be requested to such applications; that a letter be drawn up and forwarded to the several Boards, pointing out the importance of the object in view by the Committee in making this application; and further, that a copy of the Committee's report be sent with each application."

It has been suggested that cases in the London hospitals will not present a fair average of the cases affecting the whole community. Your Committee admit the truth of this to the full extent. But after the example has been set in the London hospitals, your Committee are convinced that returns on the same plan could be procured from the provincial hospitals, the prisons, the poor-law unions, the friendly societies, and from private practitioners. This would open a wide field of comparison, and lay the foundation of improvements in the healing art, very much calculated to alleviate human suffering, and to prolong human life.

ON

DISEASES OF THE BRAIN.

By E. COPEMAN, M.R.C.S.

(For the *London Medical Gazette*.)

[Concluded from p. 116.]

CASE III.—Mr. S., a stout farmer, 80 years of age; joints of his fingers and toes filled with gouty concretions; was attacked on the evening of the 17th of May, 1842, with symptoms of apoplexy. I found him comatose, unable to articulate, almost unconscious of efforts made to rouse him; pulse slow and full; breathing heavy.

A blister to the neck; cold lotion to the head; a dose of croton oil to act on the bowels, which had been sluggish for some days.

Next day he became more sensible, but much inclined to coma, with a bloated countenance and heavy pulse. My assistant ordered four leeches to the temples, and blisters behind the ears.

20th.—Quite sensible; bowels open; has no paralysis.

22d.—Passed a restless night, and is irritable.

Purgative mixture; and a morphia draught at night.

23d.—Slept well, and is better. He continued the aperient medicines for some days, and is now quite well.

CASE IV.—J. D. æt. 60, short and rather stout, was seized with hemiplegia on the 15th of September, 1842. He was seen soon after the attack, and treated by blister to the neck and warm purgative draughts. Arteries somewhat ossified.

October 12th.—He now walks about without difficulty, complaining only of weakness in the affected limbs.

CASE V.—M. F., æt. 80 years, a spare, active old woman, was attacked on Friday, Nov. 5th, 1841, just after a hard day's work at the wash-tub, with pain in the head, quickly followed by total insensibility. Next day I was sent for, and found her in profound apoplexy. Stertorous breathing; bronchial rattle; total insensibility. She had been in this state all night. Not able to swallow; pulse feeble.

Empl. Lyttæ amplum Nuchæ. Mustard poultices to the legs.

7th.—Blister drawn. Can now be roused so as to answer questions distinctly, and can move the right leg and arm; left side appears to be paralysed. Has taken some gruel and castor oil.

8th.—Same as yesterday. Bowels not relieved.

Mist. Cathart. 4tis horis.

9th.—More drowsy to-day. Bowels not open.

10th.—Died.

CASE VI.—Ann Ellis, 75 years of age, seized with apoplexy May 17th, 1842. I found her quite insensible; breathing very much impeded with mucous rattle; surface pale, cold, and clammy; pulse almost imperceptible: she seemed to be within a few minutes of her death. I ordered a little warm brandy and water, and left the house, not expecting to see her again. She however rallied, and recovered her sensibility to some extent, until the 25th, when she again became comatose, slightly convulsed, and died.

Although these two last cases proved fatal, they are calculated to exemplify the effort which nature is able to make towards restoration, even when there is serious and fatal mischief in the brain; and surely it is wise and reasonable not to prevent it by depletory treatment, which must necessarily remove every

chance of spontaneous reanimation. Who can say that these two women might not have recovered, if their *vis vitæ* had been more vigorous? The mischief to the brain must have happened at the first; if partial recovery take place in spite of this, who can point out the degree to which it might proceed where the constitutional strength can be supported? The *vis medicatrix* is sufficient to repair external injuries of the severest character, where the constitution can be maintained in a fair degree of vigour. We see daily cases of recovery from fevers and internal inflammations, where parts of delicate construction, and important to life, have been severely, almost mortally, implicated; the remedial agent being this same *vis medicatrix*, assisted by such means as we possess for supporting the powers of the constitution. In some chronic cases of organic disease, we witness the same power at work to delay the fatal result as long as possible; the length of time being often proportionate to the degree in which art is able to support the general strength. Why are we to distrust this powerful agent where disease or injury of the brain is the cause of danger? Do not some of the cases I have related prove it to be efficient? It is said, that by letting blood freely in cases of apoplexy, extravasation may be stopped, and further mischief prevented. But what has been the result of such large depletions? Unfortunately the recoveries are far too small in number to warrant any just inference in favour of this usual plan of treatment; and when it is considered that bleeding will sometimes itself produce the symptoms under which apoplectics die, surely we should pause to inquire whether such fatal issue may not be the effect of the treatment, rather than the necessary consequence of the disease.

“Magnæ sanguinis detractiones, graves et fere perniciosiores effectus habent; arteriis enim variisque cordis saccis multum et subito relaxatis, viribusque eorum sic imminutis, sanguinis impetus ades deficit, ut ad excitandum snisque muneribus aptandum cerebrum non amplius sufficiat, unde vertigo, nausea, vomitus, animi defectio, et non modo cordis arteriarumque actio, sed omnis motus atque sensus interruptus.”

“Ingens et subita sanguinis jactura omnibus brevi et multum nocet, nec raro mortem affert. Hæc enim non modo insignem debilitatem, et vertiginem et nauseam, aut vomitum et animi defectionem, sed convulsiones quoque generales, et plerumque lethales, inducit.”—*Gregory's Conspectus.*

“Largæ et repetitæ sanguinis detractiones omnibus apoplecticis et paralyticis, nullo delectu habito, utiliter aut tuto adhiberi certe non possunt. Etenim juniores, et robusti, non tam obnoxii sunt his morbis, quam pueri infirmi, et effæti senes, in quibus vires nutriendæ sunt, et excitandæ, potius quam minuendæ; dum multa sanguinis profusio omnes naturæ conatus reprimat, et tenues vitæ reliquias penitus extinguit. Quod si consulamus experientiam, hæc, quantum possum judicare, testatur copias sanguinis missiones sæpe nocuisse, easque in non paucis ægrotis tutius fuisse prætermittas.”—*Heberden, Comment. p. 300*

In the first case, and probably in the second, emetics produced very beneficial effects; and by some few practitioners they have been considered the proper remedy for apoplexy. Yet is the fear of their being injurious so prevalent, that we are advised strictly to avoid them. Abercrombie says, “the use of emetics in apoplexy is as old as the days of Aretæus, and they have been employed at different times by physicians of the first eminence, among whom may be mentioned Etmüller, Sydenham, Boerhaave, and Lieutaud; and the practice must therefore have some foundation in observation and experience. There can be little doubt that, in the early stage of any apoplectic affection, the use of an emetic would be a very hazardous practice.” He, however, strongly recommends purgation. “This is always to be considered as a most important and leading point in the treatment of apoplexy; and though, in arresting the progress of the disease, our first reliance is upon large and repeated bleeding, the first decided improvement of the patient is generally under the influence of powerful purging.” (On Diseases of the Brain, p. 289).

Now when we bring our unbiassed judgment and experience to bear upon the question of the comparative safety of emetics and purgatives, what do we find to be the result? Why, that we can find scarcely a case where apoplexy

has been produced by the operation of an emetic, whereas it is not an unusual occurrence for a person to have a seizure during an evacuation of the bowels. I believe this is an indisputable fact, and to my mind is quite decisive of the act of vomiting being as harmless, if not more so, than that of alvine evacuation.

I think it must be allowed by every candid observer that the legitimate inference to be drawn from my own experience of apoplexy, as exhibited in the cases I have published, is, that the non-depletory mode of treatment is the most successful: the reported cases of other practitioners indirectly corroborate this inference. I have collected them in large numbers; the treatment has been, for the most part, profuse expenditure of blood; and the deaths awfully numerous.

It would be absurd to doubt that the cultivation of morbid anatomy has been immensely beneficial to the practice of medicine; but it appears that, with reference to diseases of the brain, it has overstepped its proper bounds, and usurped the position which the practical experience of the past and present ages is entitled to maintain. Nearly all our reasoning with respect to the treatment of apoplexy is founded upon certain post-mortem appearances, some of which are probably more the consequence of death than of disease; the treatment itself is not based upon what has been successful in curing the disease (for the usual plan is eminently unsuccessful), but upon arguments, brought forward with no slight degree of plausibility, concerning the occurrence, causes, and removal, of extravasation of blood or serum in the brain. It is well known that such extravasation is not the only cause of even fatal apoplexy, for cases have occurred where no diseased appearances have been discovered in the brain after death. It has been shown, by others as well as myself, that apoplexy, severe and threatening, has been cured without bleeding: the opinion that it can be so cured appears to be slowly gaining ground. Let us put aside for a while our preconceived notions, and by patient examination of the effects of remedies, endeavour to enhance the credit of our art by lessening the fatality of this serious disease. Perhaps it must still be granted that venesection is advisable in some cases of apoplexy: I believe

these cases to be very rare; for I have seen the heat of skin, flushed countenance, strong and rapid pulse, laborious breathing, convulsions,—symptoms indicative, if any, of the necessity of abstracting blood—give way under the simple employment of cold to the shorn scalp, and purgative clysters, without the assistance of any depletory measures likely to occasion subsequent loss of power. What could apparently be more desperate than the situation of my patient (Case II.) at noon on the 28th of June? The satisfactory removal of the severe symptoms, and the present convalescent state of the patient, are the best arguments in favour of caution and moderation; and the best answer to the theory that, in apoplexy, the only way to preserve life is, by art, almost to destroy it.

“Serum est cavendi tempus in mediis malis.”

I had just completed this paper, when, on the morning of the 13th of October, I was summoned to attend Mrs. A., whose case I have already related (No. II.) She had been subjected to more excitement than usual, made two or three calls the day before, and afterwards dined off food not easy of digestion. About 5 o'clock A.M. she awoke her husband by grasping his hand, but could not speak. She rallied a little, and was assisted out of bed to the night-chair. The bowels were relieved; and as she became drowsy and slightly convulsed, I was sent for. She was comatose, with rather full pulse and perspiration. Drew up her legs when I tickled her feet. Could not rouse her; but during my attempts to make her speak her face became horribly distorted, and she had a severe general convulsion of some minutes' duration; she remained quite comatose after the convulsion had subsided. I applied cold cloths to the scalp, and gave a strong purgative injection. In three hours I visited her again: the coma had remained about an hour after I had left, and the bowels had acted freely; she had vomited a little bilious matter; there had been no more convulsion. She could now articulate tolerably well, and was sensible enough to ask me to dress her issue; she had chilled once or twice, and removed the cold application from her head; and when her arm was uncovered during the dressing it became cold, and all

"goose-flesh." Would it have been safe to have reduced the heat of skin and strength of pulse by withdrawing blood at first? In the evening another injection was given: she was more sensible; but the tongue was foul, and she complained much of pain in the head.

Cold vinegar and water to the forehead.

15th.—Another injection, followed by relief from the bowels, and perfect restoration of her senses; pulse quiet; tongue much cleaner. Ate some breakfast, and was well enough to settle wages with a servant who was about to leave.

Cottishall, West Norwich,
October 16th, 1842.

MR. LISTON'S "VARIETY OF FALSE ANEURISM."

To the Editor of the Medical Gazette.

SIR,

UNDER the conviction that by withholding from the public the whole truth of the following much controverted case, I should incur the imputation of moral cowardice, I venture to claim a small space in your just and temperate pages. A false precedent with a great name attached to it is as likely to be pernicious in medical as in legal science: and he who conceals the truth from motives of interest or fear, is only less guilty than he who assiduously promulgates falsehood to screen himself from merited blame.

As House-Surgeon to University College Hospital, under Mr. Liston, on the 20th Oct. 1841, I examined a boy who had presented himself a few minutes before that gentleman's visit. His mother attended with him, and gave, partly at that time, partly afterwards, the following short history of the case, which I copy verbatim from the Hospital Case-Book, as it was drawn up by the dresser for the week, Mr. Colechester.

"George Anthony, æt. 12, admitted Oct. 20th: has been a healthy child until, six years ago, he had measles and whooping-cough, which left him in a very reduced state. About two months ago he had a violent cough and much fever: at this time a small swelling was first observed just below the ear; it was soft, and might be easily and entirely dispersed by pressure. This

was shown to the surgeon of the parish, who attended him, but as he gave no directions with regard to it, his mother applied fomentations and poultices. It has increased gradually and slowly until the last three or four days, when its progress was more rapid and irregular," &c. I examined it in the presence of some students, and expressed my belief that it was an aneurism. When Mr. Liston came at 2 p.m., as the case was important I told him immediately "that there was a boy among the out-patients with a swelling in his neck which seemed to me like an aneurism." Mr. Liston quickly came to the patient, and observed, "You don't get aneurism in boys like that." It was my duty to carry instruments. Mr. Liston asked for "something to make a puncture with." I offered an exploring needle; he said, "he did not want a thing like that." I then offered a small tendon needle; he seemed angry, and produced from his own pocket several bistouries, from which he selected a full-sized one, and made with it an incision into the swelling, in a perpendicular direction. Arterial blood spirted out by the sides of the bistoury. Mr. Liston observed, it was "an anomalous tumor," and changing the position of his knife, held it horizontally, so that the sides of the incision were kept separate; the blood now came out in a thick gush; fainting quickly ensued, and the boy remained in an almost pulseless state for three hours. Mr. Liston closed the incision by means of three hare-lip pins and the twisted suture. There was not the slightest appearance of pus in the blood. The incision was not a small one, or made with a narrow bistoury; otherwise, why should three hare-lip pins and the twisted suture be necessary to close it? After the lamentable nature of the mistake became apparent, a student asked if a bruit had not been heard. I answered, "yes;" and Mr. Liston, after I had done all in my power to prevent the misfortune, attempted to attach blame to me for not having mentioned this symptom before. The reasons why I did not do so were, 1stly, Because, as a diagnostic symptom of aneurism, I believed it to be worthless: any unequal pressure exerted upon a healthy artery, as by a tumor, or by the stethoscope itself, will produce a bruit. And, 2dly, Because Mr. Liston permitted me

to say but little on the subject. At my request alone, he went to the window to examine the swelling between the fauces, where I told him I doubted if a thrill were not perceptible. He turned away abruptly, and insisted on making the incision in the manner above stated. Surely, in my anxiety to prevent a mistake, I overstepped the bounds of my duty in saying what I did. It could not be my duty to instruct Mr. Liston in the nature of his cases. But to return. The incision was made at 2 P.M.; reaction did not occur until 5 P.M.; and from that time until 4 the next morning, the swelling increased very much, becoming hard, tense, and bluish, and extending downwards to the clavicle, and inwards to such a degree as to produce great danger of suffocation by pressure on the trachea and larynx: the diffusion of the aneurism also threw great stress upon the pins. I sat up with the patient all night, little expecting he would survive until morning; the danger of suffocation, or of hæmorrhage from the giving way of the sutures, seemed so imminent. From 4 A.M. until 2 P.M. on the 21st, when the carotid was tied, the symptoms were less urgent. To quote from Mr. Liston's account of the operation, given in his pamphlet, "The great difficulty arose from the necessary smallness of the incision; the tumor extended downwards so low in the neck that it was impossible to extend the incision upwards, and the artery, which appeared to be at a very great depth from the surface, was to be sought for at the bottom of a small hole." The poor patient died of hæmorrhage from the wound of the operation at 5 P.M., Nov. 5th. At the *post-mortem*, "the ligature was found to have been placed close to the origin of the carotid from the innominata;" "the proximal end of the vessel was quite open;" "there had been no attempt at the formation of a clot."

Much of the above detail may be thought tedious, but where different statements have been made, it is necessary to be explicit. Mr. Liston has lately published this case, in a pamphlet, entitled "On a variety of false Aneurism," in which he attempts to prove that it was originally an abscess, and adduces several other cases in support of this explanation: but it is remarkable that none of the latter are in

any degree similar to it. Two of them, namely the third and the last, are plainly referrible to diffuse inflammation of the cellular tissue, producing lesion of the arterial tunics; and the others to ulceration into an artery from the cyst of an abscess after the evacuation of the latter. Where is the proof that the aneurism in G. Anthony's case was ever an abscess? The swelling at first disappeared under pressure. Mr. Liston supposes that the pus which once filled the cavity was washed into the circulation by the current of blood. Now although pus is frequently without danger taken up by the absorbents, in which operation it probably undergoes a great change, when was so much as half an ounce or an ounce of that fluid ever known to be admitted immediately and at once into the circulation without fearful constitutional irritation, purulent deposits, and generally death? Yet no constitutional symptoms followed the appearance of the swelling in this case. Whether it was a true or false aneurism, according to Hodgson, or Scarpa, or others, *it was a cavity communicating with an artery and containing arterial blood*. Before it was opened it did not externally seem so large as a hen's egg, and was situated quite high up in the neck, as is proved by its progressing so much between the fauces: and if the carotid had been tied immediately after the unfortunate incision, the boy's life might have been saved. There is plenty of daylight after two o'clock at this time of the year; and if it were otherwise an operation so urgently demanded ought to have been performed by artificial light. The circumscribed was converted into the diffused aneurism at 2 P.M., but not until 5 P.M. did reaction occur, and the swelling increase, by blood being injected into the cellular tissue around; and after a delay of twenty-four hours the increase was so great, that no chance of success was afforded to the operation. I know a case in which a popliteal aneurism was punctured by mistake, but the eminent surgeon who made it tied the femoral artery without delay, and thus did his best to remedy the blunder, without attempting to prove that the aneurism was a false one.

It is very unfortunate that Mr. Liston did not inform himself more correctly of the age of the patient, as he thinks the question of age so important,

in determining the nature of the swelling. The mother of the boy on two occasions stated to me that his age was *twelve years*; and I wrote that age on the card at the head of his bed. The card remains to prove it. The mother must have made the same statement to Mr. Colchester, as the hospital case-book testifies, and every student in attendance must have known the same fact.

I have been more nearly concerned in this unfortunate case than any other person, except Mr. Liston, no hostile feeling towards whom, has prompted this publication of the simple truth. If any other public officer had pursued the same line of conduct, I should have thought the same plain duty alone remained to

Your obedient servant,

JOHN CHARLES BUCKNILL, M.B.
M.R.C.S., Late House Surgeon to the University College Hospital, late President to the University College Medical Society.

8, Westbourne Place,
Eaton Square.

ON

DUTCH MEDICAL INSTITUTIONS.

By EDWIN LEE.

(For the *London Medical Gazette*.)

[Continued from p. 111.]

THERE are also, at Amsterdam, an hospital for the Jews, and one, half a mile from the town, for chronic cases, syphilitic and insane patients. The latter contains about 450 beds. There are no visiting physicians, all the inmates being under the superintendence of a resident medical attendant; and, as far as the insane patients are concerned, the place may be considered merely as a house of detention, as no treatment appears to be adopted. The number is about 150, the greater part females. The wards are small, dirty, and close, containing about 20 beds each, the beds almost touching each other; this is likewise the case in the wards for the more furious patients, which presents altogether a distressing and disgraceful spectacle. A new building, however, is now in progress on the road to Haarlem, for the reception of the insane, who will there be subjected to more regular and methodical treatment. The syphilitic pa-

tients are, for the most part, lodged in a small detached building; almost all of them are labouring under secondary symptoms, which circumstance is ascribed to the neglect of applying for relief when merely affected with primary symptoms, notwithstanding prostitutes are said to be subject to the control of the police; and even if a female affected with syphilis desires to leave the hospital before she is cured, the physician has no power to prevent her. The treatment consists principally in the internal exhibition of mercury; the oxymuriate is generally preferred. In some cases, iodine is combined with mercurial preparations.

Utrecht is a handsome town, containing about 40,000 inhabitants. The university is inferior to that of Leyden, the number of students not being more than two-thirds. There are two or three museums (Blenland's and Lidth's) of comparative anatomy and zoology, which, however, present nothing very attractive to those who have seen others of more importance. Professor Schroeder Vanderkolk occupies the chair of anatomy and physiology; Loucq, that of special pathology and therapeutics; Suerman, surgery; B. F. Suerman, general pathology, therapeutics, and materia medica; Mulder, surgical operations and obstetricity; Alexander, ophthalmology. The hospital (*Ziekenhuis*) is situate near the end of the town, and surrounded with narrow streets. It contains about 100 beds, from eight to sixteen in each ward. In the upper story of the central portion are the female patients, the men occupying the larger wing, while the smaller wing is appropriated to the cliniques. The hospital for the insane is a large building, in a more open situation, at the opposite end of the town. Curable and incurable patients are admitted. They are divided into three classes, according to the amount of their payments: the lowest class pay 150, the next 300, and the highest 800 florins per annum. The two higher classes are lodged in rooms containing from one to three beds; the other class sleep in wards of about sixteen beds, lofty, clean, and well ventilated. The furious patients are placed in isolated dark cells till they become more tranquil: the only means of personal restraint which is adopted is the strait waistcoat. The douche is a good deal em-

ployed in the treatment. Many of the patients are employed in various kinds of occupation, though but little in the open air.

170, North Street, Brighton,
Oct. 20, 1842.

CASE OF
CENTRAL LACERATION OF THE
PERINEUM DURING LABOUR.

To the Editor of the Medical Gazette.

SIR

IF you consider the following case of sufficient interest to the medical profession, perhaps you will do me the favour of inserting it in the pages of your valuable journal, and oblige yours,

Very obediently,

T. C. COWARD, M.R.C.S.

5, High-street, Stepney, Oct. 24, 1842.

Mrs. B., of Stepney, æt. 21, of rather a strumous diathesis, engaged me to attend her in her confinement. I was called at 10 A.M. 7th of April last, and was informed she had been in slight pain for several hours; found the os uteri thoroughly dilated, and the head of the fœtus descending, the pains very forcible, and every thing had the appearance of a happy termination. I was a little surprised, however, after a short period, to find that the head pressed strongly against the back part of the perineum and anus, distending those parts enormously without effecting any dilatation of the external parts, notwithstanding all the support I could give to incline the head to the arch of the pubis. At length, during a severe pain, she complained of something cracking; indeed I felt it myself give way under my hand; and on examination found a laceration about an inch and half long, extending across the perineum close to the sphincter ani, from which arterial blood was escaping in a small stream. I then began to fear that notwithstanding all I could do to prevent, the child would escape there. I immediately called in a brother practitioner, and by our joint efforts we succeeded in delivering the head through the natural outlet in about half an hour; but the same pain which brought the head forced the shoulder and elbow through the perineum, causing a dreadful laceration. The placenta soon followed, and the

uterus contracted well. We then made an examination, my friend introducing his finger by the vagina, while I did the same by the anus, and found the recto-vaginal septum torn to the extent of two inches, a few fibres of the sphincter, and the whole of the perineum, with the exception of about half an inch of fourchette. We merely sponged the parts and tied the legs together, and about three hours afterwards Dr. F. H. Ramsbotham saw the case with us, and directed two sutures to be applied; the bowels to be kept confined for a week, and the catheter to be used twice a day. All this was done; the parts however sloughed, and the ligatures with a considerable portion of the neighbouring structures came away. Poultices were used; and on giving an aperient at the end of a week, had the satisfaction of finding that the evacuations came through the natural passage. The black and zinc lotions were used, and by supporting her strength with wine, tonics &c., in three months the parts had granulated, but the vagina was much contracted. She left town for the country.

In making a few remarks on this case, it is very important to know the cause of such an accident, with a view to its future prevention. Here due support was unremittingly given by me to the perineum. I certainly remarked that the sacrum seemed straighter than usual; that from the sphincter to the fourchette there was an unusual length, and its fibre seemed softer than natural. I could not account, however, for the obstinate rigidity of the external parts until the other day I was reading Dr. Ingleby's excellent practical work on Obstetric Medicine, wherein he accounts for it by the parties, when children, having chronic inflammation with discharge, so customary in the strumous habit. I therefore made inquiries of the mother of my patient, and found that for two or three years, when a girl, she had a troublesome discharge, and was obliged to use lotions with syringe &c., which, I have no doubt, gave rise to the preternatural thickening and rigidity of the external parts.

I have been led to make these remarks from an idea that a case like the one I have just related might happen to a young practitioner just commencing his career, and the world might condemn him for ignorance or inattention,

when I am convinced, even by the best directed efforts, such an accident can rarely be prevented; at all events, I know of no means unless, it would be justifiable to anticipate the laceration by the use of the scalpel.

ON THE DIVISION OF MEDICAL LABOUR.

By ROBERT HULL, M.D.

(For the *London Medical Gazette*.)

The Hospital Physician.

It may appear superfluous to define the character of this practitioner. It *was* unnecessary twenty years ago: it is imperative *now*. The licentiousness of reform, which has distressed, nearly subverted, the empire, has ramified into our once concordant art; and, unless the eyes of its professors are opened, will vitally damage its benefits. I say benefits, for, after all, the public are chiefly to be respected, when we discuss the novel amalgamation of departments; and I declare, with a venerated physician of the west, "to me personally this will be of no consequence; to the lives of the public, a confusion of pursuits may hereafter be of great."

It is now necessary to ask the question, "Who is to be the physician in a hospital?" It is plainly answered by the rules of every institution. If not plainly, the answer is *assumed*; an indirect evidence, stronger than the written regulation. The bare term implies that he is to be a physician; not a surgeon. He is to be not merely restricted to medicine in the hospital; but he is not to be elected to the charity unless, out of it, he practises as a pure physician.

The divisions of our art do not regard the studies, but the *practice*. All of us are supposed to enjoy a primordial and common substratum of tuition. All are supposed subsequently to select their peculiar walk.

The general practiser who becomes a physician, no matter at what period of his life, only extends his primordial education, enriched by experience; the longer, perhaps, the better. *When* he is promoted, he is expected to confine his studies, observations, *trade*, to simple physic. The division equally de-

manded by science, by the wants of the public, by the fraternity of medical men, is of *labour*, not of learning.

This has been provided by the founders of hospitals: otherwise the distinction of titles is absurd; otherwise the six, or twelve officers, should be designated by a common name, and execute common duties. This is so obvious, that even the irregulars deny it not. They take precious care to be circumspect within the walls. They never brandish the scalpel, nor raise the pullies, nor adjust the bandage. They procure the surgeon's hand to open their dead patients.

No. They are amenable to the governors; and they dread an expulsion. But, secure from official stigmata, they violate "division" in private practice. They operate abroad. Is this logical? Is this manly? I simply put the question—is this exactly honourable? They concede the principle of divided labour where they *must* concede; they evade it where no laws can enforce.

The medical body, the public, should remember that this maintenance of discipline within a hospital does not prevent the mischiefs which *all* suffer from out-door abnormities. The irregulars themselves testify to the advantages of divided labour: otherwise, why do they submit to limitation inside their respective institutions. Their own manhood, virtue, consistency, should induce them to spurn a separation of departments in *official* routine, which they disclaim in their private proceedings. Will they allow that interest, low, selfish considerations compel them to wink at an arrangement which, in their hearts, they believe to be unjust—not founded on the public wants—hostile to science?

Behold the dilemma! If they believe promiscuous practice the proper, why do they violate their sentiments by submitting to the discipline of office? If they believe it, as their hospital passivity implies, wrong and pernicious, why do they get a private living by condemnable methods?

But "what harm can they inflict on their hospital patients by their private promiscuities?" What harm? all that can be effected by the violation of divided labour; by their non-concentration of study, skill, power, on simple medicine. Yet this concentration the

governors of hospitals expect. They entrust the pitiable poor to the surgery of the surgeon. They demand for the non-surgical patients the medical attendance of the pure physician. For my part, I do not understand how a conscientious gentleman can undertake the office of hospital physician, unless he conform to the intentions of the subscribers.

To those hospitals—at present, most happily, few—where an operator officiates as a physician, it may be said the governors elected him with open eyes. Of this I am not so certain. In one institution, where the office was contested by two gentlemen, one a pure physician, the other amphibious, it is true that the real physician, accomplished and unexceptionable, was vanquished; yet not at the poll; he retired through prescience of defeat. But it was expected by subscribers, who otherwise would actively have opposed him, that the successful aspirant would relinquish his surgery when installed in his office.

But even were the statement well founded, that subscribers would advisedly elect an operator as a physician, then I should say, the laity cannot judge in this therapeutic business; and instead of a republican charity, managed by the popular opinion, give *me* the monarchic or aristocratic selection; give me such an establishment as that of Guy.

In this magnificent hospital we shall never hear that the office of physician is filled by any practiser, whose body and soul are dedicated to absorbing surgery.

But I will not believe that there exists in England a hospital, whose supporters would, if they understood their man, elect a hybrid to the office of unmixed physician. Fancy such a circular as the following; prophesy the result.

MY LORD,—I solicit your vote for the office of Physician to the Epsom Hospital, rendered vacant by the death of Dr. Racer. I can boast superior claims. I am an operating surgeon, and *therefore* peculiarly fitted for a medical position. I am devoted to the knife; and, *therefore*, earnestly covet a post instituted for the practitioner, who never handles it. I love the chirurgery of the healing art, to which I dedicate my time and studies—my soul and

strength; and, *therefore*, I supplicate your interest for an office which demands all my powers to be exerted in an opposite direction. Should I reach this summit of my ambition, I promise your Lordship to consecrate to the medical cases all those energies which my preference of operations may leave to me; all that time which an extensive trade in surgery enables me to spare.

Your Lordship's, until death,

NICHOLAS OMNIBUS, M.D."

The division of labour is too sparing, not too multiplicitous. This is shown in the metropolis, where full and successful play is given to the divisional arrangements. See the varieties of excellence in the same body of physicians: one intelligent of cerebral disorders; another heartily devoted to cardiac; a third inspired with pulmonic pursuits; a fourth near dying from investigations of the liver: all, authorities in their peculiar departments! So in the surgical arena: the herniotomist; the lithotomist: the amputator; the pathologist; *good* for joint-evil!

Promiscuous labour cannot, logically nor consistently, step within the boundaries of a particular craft nor profession. If a man deserve those sneers which have been expressed towards him from a London chair, because he does not impudently pretend to universality in medicine, he is likewise contemptible because he does not expatiate, genius-like, beyond it. Crichtonian perfection implies a circle of sciences. *The Duke* should unite, in his own person, the delivery of the nation and that of the Queen; and Dr. Locoek is no philosopher, unless he can extricate an army from peril as well as a royal infant from straits.

But who is to be the hospital physician? If the surgeon, why not the apothecary? If the possession of a doctorate justifies the first, the second must not be excluded.

Then we shall see *Dr. Variorum*, the surgeon, apothecary, and man-midwife, perhaps the keeper of an *open* shop, a candidate for the office of physician to a west-end hospital; and the proud physician of St. George's may be called on to meet in consultation a colleague, who will "make up" the prescription which results; *unless*, before this threatened era, every gentleman shall have left the profession; and the pub-

lie, *who will richly deserve it*, be kept in repair by druggists, hucksters, sansculottes.

The precedence, which hitherto has been conceded cheerfully to the physician, is founded on his isolation, purity, non-rivalry. Private life, the public hospital, have religiously maintained his privileges and honour. But can we expect that surgeon J., or K., or L., shall manifest courtesy or deference to *Dr. Omnibus*, who invades his department? Is Mr. J. to find a rival operator, about the town, in *Dr. Omnibus*; and yet pay him the courtesy of a hospital colleague in medicine, when, perhaps, Mr. J. is vastly superior even in that compartment of healing? Is J., the surgeon, eminent as he is for courtesy, for gentlemanly bearing, for deference to the abstract medicus, for conservation of professional ranks; is he to push this sentiment to the extreme: equally respectful to the regular and the disruptor; to the man who consults the surgeon's pocket, and to him who pockets the surgeon's fee? Is Mr. J. to be "called in over him" in private life, but to give him the pass in the public hospital? See what commotions, quarrels, feuds, arise out of these irregular movements! I knew a provincial town, once famed for its professional army, torn to rags of discontent and bickering, through this sad departure from discipline. How should it be otherwise? First, the innovator himself, his surgical hand against every body! Then his backers—the few silly, or servile, or selfish men, whom he can get to back him, distasteful to the friends of order. Then the loyal themselves, *sick* of endless animosities, giving up the contest in lamentable trepidation. Then the per-paucissimi, who still remain impavid among the ruins of their corps, alone, unsupported, disliked for their tenacity. Contempt, or hate, or alienation, every where. Friendships broken; consultations evaded; the public chuckling over the *Bellum Intestinum*! Sure, after all, to patronize the irregular; and deserving to suffer all the present, all the future, consequences of their ignoble interference.

I long for "the restoration." The rebellious have perpetrated so much mischief, that I should hail the return to order, even though effected by a despotic pacificant. I tremble at legis-

lative interference in a cause which ought not to require it. I should like to see the parliament impenetrably deaf to reforming clamour; deserving the eulogy which was addressed by Pliny to an ancient quieter of factions—"Pacem reddidisti; excidisti intestinum malum, et provida severitate cavisti, ne fundata legibus civitas, eversa legibus videretur."

I wish the parliament would say, "Settle it, gentlemen, among yourselves: you have plenty of corporations, and a sufficient number of parliamentary acts to uphold them. Do you *your* duty; scout the irregulars; consociate only with the fair practitioner; cultivate the fastidious, the honourable, the just: then may you fear no evil from druggists nor charlatans. If an occasional attempt be made to injure your interests, and violate your established habits, show that you have "pluck" as well as perception; and imitate the admirable example set you by Messrs. Bateson and Howitt, of Lancaster. You will thus effect more benefit to your corps than by rambling over the country in unprecedented associations, with croaking twaddle about reform, and candied compliments to each other.

Cease to make stare the rural population, north, south, east, or west."

Ξυνήλθομεν δὲ βουχόλοι καὶ ποιμένες,
χαίνων λόγων δώσαντες, ἀλλήλοις ἔριν,
ἕως δεινὰ δρῶσι θαυμάτων τ' ἐπάγια.

MEDICAL GAZETTE.

Friday, October 28, 1842.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

HEALTH OF THE POOR.

SOME years since we quoted the case of an eminent philosopher, who was afflicted with a partial amaurosis. His eyes refused one half of their duty, so that if he attempted, for example, to read a name on a door, he saw the first letters only, while the latter ones were shrouded in darkness.

In like manner, the Poor Law Com-

missioners, when they attempt to ascertain why disease sweeps away the indigent with double virulence, can see but one half of the causes; dirt and want of ventilation they can spy at the distance of 500 miles; but put down STARVATION in the largest letters, and their optic nerves are no longer susceptible of impression.

The censorious, indeed, might quote the adage "None are so blind as those that will not see"; and might observe that evidence is to be found in the appendices on the subject of starvation, of which no abstract is given in the long report before us.* In a word, the Poor Law party is not pleased with all the information it gets:

Infelix perit lucem, refugitque repertam!

Bearing in mind, therefore, this important mutilation, recollecting that we are reading the tragedy of Hamlet, with the part of Hamlet omitted by particular desire, we will touch upon some of the principal points in this elaborate report.

The first point which he touched upon is the mortality resulting from preventible causes. It seems that the deaths in England and Wales from epidemic, endemic, and contagious diseases, including the heads of fever, typhus, and scarlatina, amounted, in 1838, to 56,461; "the great proportion of which," says, the author "are proved to be preventible."

He also justly refers a portion of the mortality under other heads, as, for instance, diseases of the respiratory or digestive organs, to the bad condition of the dwellings of the poor. Thus Mr. Gilbert, the Assistant Commissioner, when acting in Cornwall and Devon, found that there was a large district in Tiverton, where fever was pre-

valent. The land is nearly on a level with the water, the ground marshy, and the sewers open. The local authorities have in vain endeavoured to compel the occupants of the houses to remove nuisances and cover the drains; like the cottagers of Glenburnie, the men of Tiverton "winna be fashed," and their reform can only proceed from the friendly severity of the legislature.

Similar evils, in all their painful varieties, prevail throughout Great Britain. According to Mr. Parker, Windsor is beyond comparison the worst of all the towns he has visited. "From the gas-works at the end of George street a double line of open, deep, black, and stagnant ditches extends to Clewer-lane. From these ditches an intolerable stench is perpetually rising, and produces fever of a severe character."

Evidence of the same species comes from the medical officers of the Epping, West Ham, Bromley, Wolverhampton, Macclesfield, Stockport, Wigan, Teesdale, and other unions.

Sometimes, the cottages are neither wind nor water-tight, and the medical officer attends labours, where the wet runs down the walls, and the light can be seen through the roof. Sometimes the cottagers live near ditches, into which privies and pig-sties empty themselves.* In this place, there is a court crowded with Irish, and near it a constant pool of green water or mud; in that one, there appears to be a drain which has been choked up, the stench from which is intolerable.

The town of Stafford has become used

* Report to her Majesty's principal Secretary of State for the Home Department, from the Poor Law Commissioners, on an inquiry into the sanitary condition of the labouring population of Great Britain; with appendices. Presented to both Houses of Parliament, by command of her Majesty, July 1842. London, 1842.

* Another thing that contributes not a little to the diseases of boors, is their slothful carelessness in heaping up the dung designed for improving their grounds, just before their cow-houses and hog-sties, and at the very doors of their dwelling-houses, and keeping it there for a nosegay all summer; for at this rate the air they live in must needs be polluted with the foul steams that rise incessantly."—(Ramazzini's Treatise on the Diseases of Tradesmen, English edition of 1705.)

to its dirt: "a local act for the improvement of the town," says Dr. Edward Knight, "empowers the commissioners to remove nuisances; but no notice is ever taken."

In Liverpool, a medical officer attended a family of 13, twelve of whom had typhus fever, without a bed in the *cellar*, without straw or timber shavings frequent substitutes. They lay on the floor, and so crowded, that I could scarcely pass between them." In another house he attended fourteen patients, with only two beds in the house.

The Rev. Dr. Gilly, Canon of Durham, has lately made an appeal in behalf of the border peasantry, whose cottages are patterns of wretchedness. The floor is of earth, the windows do not open, and there is neither pump nor well. The rafters are rotten and displaced, and the thatch, says the reverend philanthropist, looks more like the top of a dunghill than of a cottage.

To judge from the group of Northumbrian cottages copied from Dr. Gilly, and given in this Report, they resemble Irish huts, the *ultima Thule* of discomfort.

Still, there is a lower deep than this, and the condition of the poor in Scotland is worse. The labourers of Lochmaben inhabit buildings 30 feet in length by 16 in breadth, with a clay floor. Such a receptacle is usually occupied by two families; the partitions being formed by the backs of the beds, "which will be best understood by describing them as wooden boxes open on one side." The windows rarely open, the chimneys are bad, and as the scarcity of fuel compels the inmates to close the door, for the sake of warmth, the chamber is often full of smoke.

To see something worse still, we must follow Mr. Chadwick in company

with Dr. Arnott and others, into the wynds of Edinburgh and Glasgow. Dr. Arnott, after describing his passage through a house into a court with a dung receptacle of the most disgusting kind, and then through a second passage into a second court with a similar abomination, and then through another passage to a third court and a third dung-heap, proceeds to say:—

"There were no privies or drains there, and the dung-heaps received all filth which the swarm of wretched inhabitants could give; and we learned that a considerable part of the rent of the houses was paid by the produce of the dung-heaps. Thus, worse off than wild animals, many of which withdraw to a distance, and conceal their ordure, the dwellers in these courts had converted their shame into a kind of money by which their lodging was to be paid. The interiors of these houses and their inmates corresponded with the exterior. We saw half-dressed wretches crowding together to be warm; and in one bed, although in the middle of the day, several women were imprisoned under a blanket, because as many others who had on their backs all the articles of dress that belonged to the party, were then out of doors in the streets."

Mr. Chadwick says, that on the whole the condition of the population in Glasgow was worse than they had seen in any part of Great Britain.

According to the Poor-Law people, the moral to be deduced from these painful facts is, "teach the poor to be cleaner, and, if necessary, compel them to be so by legislative enactment." With this half moral, as far as it goes, we coincide entirely; and we should gladly hail a statute forbidding landlords to build pest-houses for their indigent fellow-subjects. But the remainder of the moral, equally true, and far more genial, and more instructive, is not to be forgotten. It is the lesson derived from these hideous scenes of misery in Scotland by Dr. Alison;

namely, that the absence of a poor-law neither teaches the indigent to rely on their own resources, nor stimulates the charity of the rich in their behalf.

The next topic discussed is the public arrangements external to the dwellings of the poor, by which their health is affected. This has already been touched upon in the preceding section, but we will not find fault with the repetition :

"decies repetita docet."

Drainage, which is often spoken of as if it had reached perfection, or nearly so, is generally defective. It is bad in Derby, Stockport, Bungay, Leeds, Liverpool, Brighton, Birmingham, Edinburgh, Trarant, Ayr, Stirling, Clitheroe, and even in London itself.

As for Liverpool, it contains 8,000 inhabited cellars, with at least 35,000 occupants! Again, the cleansing of streets and roads is most wretchedly performed. The streets inhabited by the working classes in Leeds, Liverpool, and Manchester, are in a state which beggars description. In the district called *Little Ireland*, in Manchester, the privies, besides being in a most disgraceful state, are in the proportion of 2 to 250 persons. To show the style of living in such retreats, we may mention that a cellar, once filled up as uninhabitable, is now occupied by a weaver, who stops up the drain with clay to prevent the water flowing in, yet is obliged to mop it up every morning.

At Inverness there are very few houses which can boast either water-closet or privy; and contagious fever is seldom or ever absent.

Mr. Baker applies to Leeds the observations made by Sir John Pringle on the causes of dysentery in camps, *e. g.* :—"The chief cause of dysentery appears to be the foul straw and the privies; for as soon as we had left that

ground on which we had been long encamped, the sickness visibly abated."

In St. Giles's parish, in London, Mr. Howell, a surveyor of note, has found the yard of a house covered with night-soil, to the depth of nearly six inches, from the overflowing of the privy. In Westminster, he is acquainted with numberless houses where there is no drainage, and where the cellars, being constantly flooded, the occupiers are obliged to pump out the water. This, however, is unlawful; and they have to choose between the nuisance of the stagnant water, and the paying a fine of £5. if detected.

Singularly enough, it appears that night-soil, in London, does not pay for half the expense of removal by cartage. In Edinburgh, a large proportion of the contents of the sinks, drains, and privies, is employed in irrigating the neighbouring meadows. It has decupled the value of the land, but is obviously injurious in the neighbourhood of a large town. The parties interested claim a vested right in the nuisance, and offer to discontinue the practice for a compensation of £150,000!

In London the sewerage is remarkably defective. One medical witness stated before a Committee of the House of Commons, in 1834, that four-fifths of the cases of severe typhus which he had seen were either in houses where the drains from the sewers were untrapped; or where, if trapped, they were situated opposite gully-holes; and he cited houses, where servants sleeping in the lower rooms were invariably attacked with fever.

It is impossible to conclude the present article without hopefully anticipating that the time is at hand when the legislature will put additional checks on avarice and ignorance, whether private or parochial. We trust that steps may be taken to diffuse the

enjoyment of air, light, water, and the means of rapid locomotion, at the smallest possible expense; while the law shall constantly inculcate that lesson of antique morality—

“*Sic tuo utere, ut alienum non lœdas.*”

CONVERSAZIONE AT ST. THOMAS'S.

ON Friday, the 21st inst. the first conversazione for the session, by permission of the Treasurer, Abel Chapman, Esq. was given by the teachers and lecturers of St. Thomas's Hospital. The business of the evening was opened by Mr. Grainger, by an address, in which a summary was given of the recent discoveries made by the microscope*; after which the powerful and improved oxy-hydrogen microscope, constructed by Ross, under the directions of Dr. Leeson, of St. Thomas's, was exhibited in the Theatre of the Hospital. The phenomena of polarisation were most successfully shewn, and in addition many objects which excited considerable curiosity: we were particularly struck, on first entering the great hall, with the brilliancy and effect given to the room, by the numerous lamps and magnificent microscopes which crowded the long table in the centre of the room. It was a pleasing dedication to microscopic science. In the committee room adjoining the hall, tea and coffee were liberally provided. Among the company present, which consisted of nearly six hundred persons, comprising many German, Italian, and French, in addition to many distinguished English professors, we observed R. II. Pigeon, Esq. Treasurer of Christ's Hospital; James Bentley, Esq. Treasurer of St. Bartholomew's; Prince of the Druses, Beyrout; Le Capitane Nagy de Golantha; Professor Mitscherlich, Berlin; Professor Cupari; Dr. Dieffenbach; M. de la Stoll; Sir G. Lefevre; W. Williams, Esq. M.P.; Professor Brande; Professor Cooper, and many other distinguished men.

THE HOSPITALS OF ITALY.

BY DR STRICKER.

[Concluded from p. 123.]

Catania.—This town contains two very interesting cabinets, the one belonging to Maravigna, the Professor, and the Biscari Museum. The former contains a geognostic collection from the whole of Italy, complete specimens of the forms of lava from Etna

and Vesuvius, the shells of Sicily, numerous fossils, and lastly, some very beautiful pieces of amber shot with blue, as it is found on this coast. The collection of natural history, which is ill arranged, forms only a part of the Biscari Museum. It contains lava, Sicilian marbles, shells, minerals, monsters, &c.

Messina.—On account of its loyal behaviour in the Sicilian revolution of 1837, Messina was presented with a small university. It contains a handsome anatomical theatre, an unimportant botanical garden, and a library of 18,000 volumes. The *Ospedale Civile* is situated in the suburb. At the time of my visit, typhus fever prevailed there, which was successfully treated with tartar emetic, local and general blood-letting, washing with vinegar, and tepid baths. Besides the wards for patients, it contains the foundling hospital, in which from 35 to 50 children are received monthly. Many of them are sent to board in the country, for which the payment is a piastre a month.

The boys are kept till their seventh year, the girls till their fifth, and then, if they are not adopted, are transferred to the *Conservatorio*, or orphan asylum. In the lying-in hospital, which contains twelve beds, pregnant women are received during the eighth month.

Rome.—The chief hospital at Rome, for men alone, is the *San Spirito*, near Mount St. Angelo, on both sides of the street. This hospital is capable of containing 2000 patients, and comprehends the lunatic asylum, and the penitentiary for women, *San Michele*. The lunatic asylum, which is still fitted up in the old way, with chains, &c., is not shown to strangers. The medical *clinique* in the hospital is conducted by De Matteis: it consists merely of lectures in a separate theatre. The wards are very large, the kitchen and apothecary's shop well arranged; the latter is provided with a bark-mill. The baths are very elegant, and furnished with materials for vapour baths. The daily ration for non-febrile patients is six ounces of meat and half a *foglietta* of wine. The anatomical lecture-room is very beautiful. The cabinet contains a specimen of a double uterus and vagina; and also wax preparations.

Not far from this, in the Lungara, is the Botanical Garden. The plants are arranged according to the Linnæan system, trees in the higher, and shrubs in the lower part. The walls of the botanical lecture-room are covered with figures of plants. In the *Ospedale degl' Incurabili* on the *Corso*, near the *Piazza del Popolo*, there are 300 beds for surgical patients. The surgical *clinique* is under Titucci, for whose use seven beds are appropriated to male and six to female patients. The spacious slaughter-house is

* We purpose giving Mr. Grainger's interesting observations at length, in our next number.

also worthy of notice; it is situated near the hospital, in the direction of the Tiber. A stream of water flows through it, and it is very clean and judiciously fitted up.

Florence.—Two institutions deserve remark in Florence, the one more interesting to the physician, the other to the philosopher. The first is the *Arcispedale di Sta. Maria Nuova*, intended for the practical improvement of the young doctors of the University of Pisa, as this town possesses no hospitals sufficiently large. It is also intended for lectures on every preliminary branch of knowledge, which here, as in the rest of Italy, are gratuitous. The wards of the hospital, which are built in the form of a cross, are extremely clean and orderly; they contain 2000 beds. Dr. Betti is the Director, the well-known Bufalini the Professor of the medical *clinique*, and Andreini of the surgical. Sixteen physicians, in all, are attached to the hospital. Besides his morning *clinique*, Bufalini, like the other professors, gives lectures in the hospital. The *gabinetto patologico*, which was founded in 1824, and transferred hither in 1832, is open twice a day. It is well arranged, and particularly rich in diseases of the bones. Many preparations, which would have been damaged if kept in spirit, have been copied in wax. A small botanical garden is connected with the hospital.

The second institution, the *Museo*, which is usually called *Specola*, from the adjoining observatory, is near the Pitti Palace. Antinori is the director, Amici the director of the observatory, Nesti professor of mineralogy and geology, and Mazzi of zoology and zootomy. Since Nobili's death, the chair of physics has been unoccupied. The richest collections are at the service of these professors, the most celebrated of which is the anatomical cabinet of wax figures, which is open to the public daily from 9 to 3.

Contrary to the almost universal usage of Italy, the government takes care that this collection shall progress with the march of science. Thus the germination of cryptogamic plants, represented according to the microscopic investigations of Amici, has lately been added; and Mazzi is occupied with putting up the shells according to Cuvier's system, and replacing the collection of butterflies, which was much damaged, by a new one. The wax preparations of the zootomical collection are augmented, and the less perfect ones improved, *e. g.* the representation of the development of the chicken in the egg, according to Malpighi.

The physical cabinet, which is particularly interesting, from possessing the tube with which Galileo discovered the satellites of Jupiter, as well as the observatory, contain the newest and most costly instruments.

The hospital of *San Bonifacio*, in the

direction of the *Porta San Gallo*, contains in one division an *hospice* for incurable patients, and in the other a well-arranged lunatic asylum, founded under Leopold II.

The Baths of Lucca are situated two posts from Lucca, in a romantic valley, between shady mountains. The *Bagni di Villa* are the highest spring, the hottest being the *Bagni caldi*, or *Docce alte*, which are of the temperature of 45° of Reaumur, or 133½° of Fahrenheit. There are five bathing houses, to which the water is conducted by leaden pipes; the spring *San Bernabo* alone rises near the new and elegant house belonging to it, which contains nine bath rooms and different apparatus for douches, including ascending ones. Its temperature is 32° R. or 104° F. The *Villa*, which is of the same temperature, contains public baths, one for each sex, bathing rooms, and douches. The fifth house is *S. Giovanni*, whose water, as well as that of the *Villa*, is also drunk. Carini is the official physician of the watering-place, and director of the hospital; he comes here only in July and August, Dr. Derè being resident during the rest of the time.

The Baths of Pisa are situated at the end of the plain in which Pisa lies, four Italian miles from the town, at the foot of the bare and stony mountain, *San Giuliano*. Medically speaking, they are more efficacious than those of Lucca, but they are destitute of every thing attractive. The only walk is a green planted with trees. The springs are an earthy and saline mineral water, the warm one being of the temperature of 35° R., or 110½° F., the cold one 23° R., or 83½° F. Each of the two bath houses, which stand before the pump-room, is supplied by both springs, and possesses two public baths, one for each sex. They contain, together, thirty-six bathing rooms, which for the most part are provided with douches.

Genoa does not belie its epithet of *la superba* in its hospitals, its poor-house, and its university, which are chiefly constructed of marble. The *Albergo dei Poveri*, in front of the *Porta Carbonara*, has beautiful marble stairs; the spacious entrance-hall is adorned with statues of the benefactors of the institution, and is paved with squares of white and black marble, which, in the work-rooms, however, is replaced by bricks in a very bad state. The church is decorated with marble columns, and a bas-relief by Michael Angelo. The institution occupies 1000 women and 800 men. Children are received from their fourth year, and in their fourteenth may resolve whether they will remain there or go out. The girls, when they marry, receive 200 francs as a dowry from the commune. Meat is given three times a week, and wine on Sundays and holidays. There are rooms for the manufacture of wool, silk, linen, cot-

ton and carpet weaving; a ward for slight cases of illness, the more serious ones being removed to the town; and a school for the children. A prize is given yearly to the best workman.

The great hospital *Pammatton*, in the vicinity of the theatre, is a large square, with arcades, supported by marble pillars, around a court paved with marble. A beautiful marble staircase, covered with statues of benefactors, leads to the wards, which are attended by the sisters of Mercy, and where the medical *clinique* is held.

Not far from it stands the *Ospedaletto*, which, in its lower rooms, contains 700 incurable patients, of both sexes and all ages; and 300 lunatics upstairs, in very dirty wards, the furious ones being together, and in chains. For the lunatics a well arranged, but badly situated, asylum is being built in the marshy tract fronting the *Porta dell' Arco*, near the noisy parade. It consists of a round central building, with six wings, in the two lower stories of which are 300 cells; in the third one, halls for walking; and below ground, two dark and padded rooms, eight cells for furious patients, and twelve baths. To prevent accidents the doors are entirely covered with wire lattices, and the stairs up to above a man's height.

In the vicinity of the *Aguasola* walk is the institution for the deaf and dumb, founded in 1818, and now containing 37 pupils, who are instructed in writing, geography, biblical and Roman history, natural philosophy, and religion. The attempt to have the words articulated is not made here. The institution is open to the public from 10 to 12 on Wednesday and Friday, while instruction is going on.

Aix les Bains, or, in *Savoy*, is situated four English miles from Chamberg, and one from the agreeable lake of Bourget. Its warm baths were used by the Romans under the name of *Aquæ Gralianæ*. Aix has two springs; the alum spring, at a temperature of 36° R., or 113° F., rises on the mountain behind the bathing-house; the sulphureous spring, at 35° R., or 110½° F., rises in the building itself. The bath-house contains two mud baths, one for gentlemen, the other for ladies, which are supplied from the aluminous spring; douches; twenty bath-rooms, supplied from both the springs; and sulphureous vapour baths.

S. Gervais is a spring in *Savoy*, near the Arve, in a very romantic district, between the Sallanches and Chamouni. It is of the temperature of 32° R., or 104° F., and contains sulphate of soda. The bathing establishments contain twenty-four bath-rooms, as well as douches. Dr. de Mey is the proprietor and physician.—*Zeitschrift für die gesammte Medicin*.

BLOOD-CORPUSCLES.

THE discovery of the blood-corpuscles by Malpighi was one of the first fruits of microscopic study, and since that event few objects have been more solicitously examined. It is now agreed that they are minute, flattened, transparent cells, containing (at least during one period of their existence) round or oval nuclei, and having incorporated in them all the red colouring matter of the blood.

a. Form and size. They are circular in man and in all mammalia, except the camel tribe in which they are elliptical; and they are elliptical in all other vertebrata, except certain cyclostomes, in which they are circular. In all they are flattened and have rounded borders. Whether their surfaces be slightly concave or convex depends on variations in the quantity of their contents which may ensue either within, or after their removal from, the body. In invertebrata they are less numerous, but more varied in form; for the most part they are irregular, granular, roundish, nucleated corpuscles.

It is difficult to discern any strict connection between the various sizes of these bodies and the other parts of the organism of different animals. Among mammalia those of the elephant are the largest; then come those of the papybara and rhinoceros; then those of man, which have an average diameter of about 1-3500th or 1-4000th of an inch. In general those of ruminants are smaller than those of other mammalia; and the smallest yet known are those of the little chevrotain and Napu musk-deer, of which the average diameter is less than 1-12000th of an inch. An examination of the of elaborate tables by Mr. Gulliver shows that the size of the corpuscles in mammalia is not unconditionally proportionate to that of each animal, or according to the nature of its food. Yet there is evidence enough that in each great division of the class, the size of the blood-corpuscles is, with few exceptions, directly proportionate to that of the animal's body; and that, in general, those of omnivora are larger than those of herbivora; so that if the kind of food and the size of the mammal be known, the size of its blood-corpuscles may be probably estimated.

In birds there is a greater uniformity of size and shape in the blood-corpuscles than in mammalia, and, according to Mr. Gulliver, a nearer relation between their size and that of the body. They are the smallest of the elliptical blood-corpuscles, those of the camel tribe excepted: they are generally rather less than twice as long as they are broad, measuring about 1-2000th by 1-4000th of an inch, and about six times as long as they are thick. In reptiles, the largest and, by comparison, the thinnest, blood-corpuscles

yet known occur; and Wagner remarks it as a general rule, which Mr. Owen confirms, that the longer the branchial apparatus persists, the larger are the blood-corpuscles. Thus, in the *Proteus* they are about 1-350th of an inch long, in the *Syren* 1-435th by 1-108th; in the batrachian reptiles generally, about 1-1000th by 1-3000th; and their thickness is not more than one eighth of their length. This rule, however, fails when one comes to fish, in which the branchial apparatus is persistent and perfect; for in them the blood-corpuscles, though resembling those of reptiles, are generally smaller and less elongated.

b. Structure and Composition. The blood-corpuscles are generally regarded as primary nucleated cells, and no one doubts that those of birds and the lower vertebrata consist of an external cell, formed of an extremely delicate, soft, and elastic membrane, in and within which all the colouring matter seems to be contained, and of an internal parietal nucleus, generally similar in form to the cell, but about one fourth its size, colourless, and in the large corpuscles of some of the amphibia containing a number of distinct granules.

It is questioned, however, especially by Valentin, Wagner, and Gulliver, whether the corpuscles of mammalia have nuclei, or whether the central spot be not merely produced by the accumulation of the colouring matter at the circumference. Henle would decide the question by saying that, in a few of these small corpuscles, there are nuclei; but that in the majority, (and these the most fully developed,) there are none; so that he thinks it probable, that here, as in some other cases, the nucleus, after the cell is perfected, is gradually absorbed.

According to Dr. Barry, the young blood-corpuscle in all the vertebrata is a mere disc, with a depression in the centre. In mammalia it retains this form; in the other classes the disc becomes a nucleated cell. The nucleus at first communicates by a pellucid orifice ("nucleolus") with the exterior of the corpuscle, this orifice occupying the place of the depression in the original disc. The orifice becomes narrower, and the nucleus finely granular, and these changes immediately precede the division of the nucleus into minute discs. The discs, whose number is multiplied by successive divisions and gradual appropriation of the nucleus from its circumference towards its centre, arrange themselves so as to form a flat filament, having an appearance the same as that which he finds to be presented by fibre in all the filamentous structures of the body. According to the number of discs, this filament forms within the blood-corpuscle either a ring (as in man and most mammalia, where there are comparatively few), or a coil (as in birds, amphibia, and

fishes, where the discs are much more numerous, and the filaments proportionally longer.)

The filament thus formed is flat and deeply grooved on both surfaces, being thereby thinner in the middle than at the edges. The edges are rounded; and when seen on its edge, the filament at first sight seems to consist of segments separated from one another by oblique lines. When perfected, the filament undergoes various changes: sometimes unwinding itself into a straight fibre; at others, continuing circular, while smaller coils of similar filaments are formed within it from a residual portion of the nucleus. In all cases the filament is reproduced by self-division, so that out of a single filament a fasciculus may be formed. Such changes are seen going on in coagulating blood. The filaments now mentioned exactly resemble those which are found in a great many both animal and vegetable tissues, nor can any definite line of distinction be drawn among the gradations from them to the double spiral filament, of which Dr. Barry believes that the primitive fibrils of muscle, and certain other tissues, are composed.

In all cases in which a nucleus is present, it differs in chemical characters from the cell. The colouring matter, or hæmatosine, is easily soluble in water, by which it may be completely washed out of the enveloping cells. The latter are composed of a peculiar albuminous substance (*globulin* of Berzelius), which only slowly dissolves in water; the nuclei consist of a different albuminous substance, more like coagulated fibrine, which is quite insoluble in water, and they contain so large a quantity of inorganic matter, that they completely retain their form, and, apparently, their substance after combustion.

Purpose. Dr. Barry's and others' facts make it nearly certain that the blood-corpuscles take an important part in nutrition, if not in providing the materials of the tissues ready formed, yet in giving them their due capacity for development. In some cases of reparation, indeed, as of fractured bones, the Hunterian opinion that the effused blood becomes the bond of union is strengthened by the knowledge of the changes which the blood-corpuscles may undergo; but the present evidence is insufficient to make it probable that they, or any formed parts of them, are effused in ordinary nutrition. Wagner and Henle suppose that during all their circulation, the blood-corpuscles, by the energy which they like other primary cells may possess, are occupied in giving to the blood the constitution necessary for nutrition, secretion, &c. And this seems highly probable. It is not so reasonable, for example, to suppose that the effects of respiration are finished in the lungs, as to believe that the influence of the oxygen dissolved in

the blood, is accomplished during the general circulation, through the medium of these cells with which it is continually in contact, and which might be compared to floating gland-cells.—*Mr. Paget's Report on the Microscope.*

M. DE RENZI ON TYPHUS FEVER.

AN epidemic of typhus fever, which occurred in March and April, 1841, forms the object of this memoir. The disorder raged with great severity. The most severe and frequent phenomena were those of affections of the brain, the malady at its commencement sometimes assuming the character of apoplexy.

M. de Renzi took advantage of this opportunity to pursue his researches into the composition of the blood in typhus, and the following are the results of his investigations in a large number of cases. He agrees with Andral and Gavarret—1. That the clot is usually soft and oleaginous. 2. That the fibrine is in smaller quantity than in healthy blood. 3. The globules are increased in quantity. 4. The cruor is readily dissolved in the serum, colouring it red, and being precipitated from it in the form of a powdery sediment. The hematosine has little coherence with the globules and the fibrine.

In addition to these observations already advanced by the French physicians, M. de Renzi adds other equally important characters. Thus, in addition to the increased quantity of globules, and their easy separation from the colouring matter, they appear to be deprived of their central nucleus, and seem less compact, less solid, and, so to speak, less alive. In the second place, there exists in the blood during typhus fever a peculiar odour, as if it had undergone the commencement of putrefaction.

In spite of the occurrence of all these alterations, M. de Renzi does not profess that the cause of typhus fever exists uniformly in a change in the composition of the blood; this is regarded by him as only one of a great train of symptoms. We must equally take into account the nervous lesion characterised by stupor and muscular prostration, as well as the alteration in the intestinal mucous membrane.

M. de Renzi considers these researches into the composition of the blood in typhus to give a satisfactory explanation of many of the phenomena occurring in the course of this disorder. We know that M. Magendie found hæmorrhages and congestions to occur in animals in proportion to the degree in which he diminished the quantity of fibrine in their blood; and M. de Renzi thinks we may, by analogy, attribute to the

elimination of fibrine in the blood during typhus the following symptoms, which are of so frequent occurrence:—1. The tendency to congestions in different organs, which scarcely bear the name of inflammations. 2. The hæmorrhages and effusions of blood into internal cavities. 3. Small interstitial sub-epidermic and submucous hæmorrhages, forming spots, suffusions, petechiæ, &c.—*Il Filiale Sebezio; and Gazette Médicale.*

MICROSCOPIC CHARACTER OF THE SPUTA IN PHTHISIS.

M. SANDRAS read before the Academy of Medicine a paper on this subject. He considers the results of repeated microscopic examination of the sputa in phthisis, to confirm the idea of their possessing a specific nature, and furnishes an important means of diagnosis. These researches possess, moreover, the advantage that, in their repetition, they require no particular care or dexterity.

He discovers in the sputa of phthisis numerous globules, rounded, separated from one another, of a greyish-white colour, corresponding in size and shape with the globules of pus, but differing, inasmuch as the latter are usually circumscribed, whereas the former are covered on their surface by a flocculent layer not separable by washing. Another peculiarity in these globules is, that they are nearly opaque at the centre, and gradually become more transparent towards the circumference.

All phthisical patients, however, do not expectorate sputa of this nature; neither do all the sputa from the same patient present similar characters. This is not to be wondered at, inasmuch as the source of the expectorated matter varies, sometimes consisting of pus from a tuberculous cavity, at others being mixed with bronchial mucus.

It is, moreover, remarkable that these globules cannot always be detected in the pus derived from tuberculous glands and in intestinal ulcerations of the same nature.

The author remarks that he has repeatedly examined the sputa in cases of simple catarrh, and found them to correspond with those from phthisical patients, with the exception of the globules. They presented only corpuscles differing from the phthisical globules:—1st, in that they were not separated from one another; 2d, they had not all the same size; 3d, they frequently disappeared under the microscope; 4th, they were striated on their surface.

In spite of the distinguishing characters, the author remarks that there are many cases in which it is difficult to form a deci-

sion, and these especially where the physical signs and the course of the disease appeared to contradict the indications afforded by the microscope. In general, however, the autopsy gave confirmation to the microscope.
—*Séances de l'Académie de Médecine.*

PROPERTIES OF VEGETABLE ALBUMEN.

As the organic arrangement of the ultimate vegetable tissue presents some analogy to that of animals, so do their secretions. Vegetable albumen is identical with animal albumen (white of egg, albumen of the blood); tained gluten is analogous to caseum, and the starch contained in the cells of the potato resembles cellulin in the closest manner. Inuline, and immediate principle contained in the cells of the dahlia, iuula helenium, &c., is analogous to fecula; cane sugar is contained in the beet root; raisin sugar in the mallocoi of many sweet fruits; finally, different colouring matters, the fixed and essential oils, vegetable alkalis, and even the mineral salts, are enclosed in the ultimate tissue of the vegetable kingdom. Thus, plants secrete not only the vegetable alkalis, but likewise contain mineral alkalis and salts, which they have derived from the bosom of the earth, and which we separate from them by incineration.

The vegetable albumen, which is contained in such large quantities in vegetable tissues, and performs functions analogous to those of the mucous membrane in animals, communicates to the ligneous cells (and consequently to wood) the aptitude of taking on the dry or moist putrefactive process; for this albumen is an azotised substance, and identical with an animal matter which is in the highest degree prone to putrefaction. The absence of albumen, and the compactness of the ligneous fibres in acacia wood, explain why it remains sound under circumstances which destroy every other kind of wood.—*Provincial Medical Journal.*

ON INJECTIONS INTO SEROUS CAVITIES.

For some time back M. Velpeau has devoted his attention to the effects of injections into different serous cavities: a few of the results he now mentions. He makes a small puncture into the cavity and injects a solution of iodine; in this way he has effected a cure in cases of serous cysts, sanguineous cysts, and colloid cysts, in almost every region of the body. Bronchocele often consists in cysts filled with a serous or dark fluid; in

five cases of this kind the author tried the iodine injections, and was completely successful. In dropsy of the articular cavities the operation would seem to be more dangerous. M. Velpeau tried this plan in two cases; one was cured, but in the other case it did not succeed; but he has recently employed a more simple mode of operating in cases of hydrarthrosis, and the results lead him to hope that it will be as easy to cure this disease as hydrocele with iodine injections.—*Ibid.*

SKATE-LIVER OIL

PREFERABLE AS A THERAPEUTIC AGENT
TO COD-LIVER OIL,

THE disagreeable odour and taste of cod liver oil has, it would appear, led to the substitution of the oil obtained from the liver of the skate (*Raja clavata* and *R. batis*) in place of it. In Holland and Belgium this oil is preferred to that of the cod, as being both less disagreeable to the taste internally, and also fully more efficacious in its therapeutic effects. MM. Girardin and Preisser were therefore induced carefully to analyze it, and found it to contain a per centage more of the ioduret of potassium than the cod-liver oil, whilst, in point of purity and other properties, it appeared to be superior to it. They therefore recommend it as a valuable substitute for the more nauseous article at present in use.—*Journal de Pharmacie: Edin. Med. and Surg. Journal.*

NON-RESTRAINT SYSTEM.

To the Editor of the Medical Gazette.

SIR,

ALTHOUGH I am anxious to disabuse the public mind of an impression studiously and dexterously circulated, both in this kingdom as well as in foreign parts, that the practice of the non-restraint system, and occupation of the insane patients at Hanwell, are exclusively confined to that establishment, still I have no desire to puff myself into notice; neither am I disposed to detract from the high merit which is due to Dr. Conolly for his humane and judicious treatment of the insane. But much having been said on the non-restraint system, and occupation of the patients there pursued, I consider it due to my own reputation—due, also, I have no doubt, to many other well-conducted establishments—to state most distinctly, that the non-restraint system has been carried out for more than *thirty years* at the *Laverstock Asylum*, under my direc

tion, and with the same salutary and practical results as at Hanwell, never more than from one to three patients per cent. having been under restraint at any one period. A reference to the "Visitor's Books," to Dr. Thomas's celebrated work on the Practice of Physic, published nearly twenty years ago, who states (from his personal observation) the almost *total absence of personal restraint* of the patients, and the varied amusements and occupations provided for them; and also to the following evidence recorded before the Committee of the House of Commons, as far back as the year 1815, will establish this fact.

"On the 25th Sept. 1815, I called upon Dr. Finch, at Laverstock, near Salisbury. This gentleman conducts his house in an admirable manner. He has 120 patients, and he begged me to take time to converse with the whole of them, without his being present, to ascertain how they were fed and treated. He had not a *single patient in a strait waistcoat*, or under *any personal restraint*. Every possible kind of amusements was provided for them: billiards, backgammon, chess, cards, books, drawing &c., in-doors; bowls, cricket, horses, carriages, and varied exercises and occupations out of doors. In this establishment I saw all that Tuke had written realised; and no words in which I can describe it can characterise it in too high terms."—I am, sir,

Your obliged servant,

W. FINCH, M.D. F.L.S.

Laverstock House Asylum, Salisbury,
October 20, 1842.

DEAFNESS SUCCESSFULLY TREATED AND CURED

BY MEDICATED VAPOUR DOUCHE, AND
THE MEATUS EXTERNUS DILATED
BY TENTS, &c.

To the Editor of the Medical Gazette.

SIR,

SHOULD you deem the enclosed interesting case deserving a place in your respectable and invaluable journal, I should feel obliged by its insertion,

I am, sir, yours respectfully,

WILLIAM THORNTON,

Army Surgeon, and M.R.C.S.L.

31, Baker Street, Portman Square,
22d Oct. 1842.

A gentleman residing in London, of general good health, but of a nervous temperament, has been deaf twenty-three years, in consequence of frequent colds; but his hearing was so defective as to render his life almost a burden to him. He had applied to

several (so styled) aurists, &c. who had prescribed stimulating oils, lotions, and blisters, without benefit. Upon examination of the meatus auditorius externus of the right ear, I found it was much contracted in its calibre, by the thickening of the surrounding parts, and especially the greatly increased density of the cuticle, which had a white rosy appearance, extending to the bottom of the auditory canal (near the insertion of the membrana tympani). On injecting warm water, a dull obtuse sound was produced, as if some dense medium was interposed; (the patient said that he felt something rattle in his ear). The orifice was nearly closed, and it was with some difficulty that a probe entered it. A sensation to my touch was conveyed different from that which would have been produced by the contact of a healthy membrane; whilst, at the same time, it did not cause the usual painful sensation. The sense of hearing was nearly lost, but my watch applied to the ear was audible. He could with difficulty force air into the tympanum by powerful expiration. The nose and mouth being closed, air passed freely through the left Eustachian tube into the outer ear, the membrana tympani being perforated. The patient was not conscious of this circumstance. On passing the catheter into the Eustachian tube, it was clearly shown to be narrowed; the air-douche passed with some gurgling noise into the tympanum, and in the left tube the air passes freely; hearing distance of this ear was six inches. On syringing the meatus, and dilating the orifice, there was not the slightest appearance of cerumen, but the same rosy white thickened cuticle appeared to extend as far as the eye could reach. These circumstances led me to think that it was possible the deafness depended on a thickened state of the cuticle reflected over the membrana tympani, similar to that which lined the meatus, or some morbid secretion existing between this cuticular layer and the membrane. To remove this cuticular lining I used a strong solution of acetate of zinc. In a few days, upon syringing with tepid water, several dark pieces of cuticle were washed out, and the orifice dilated so much as to give a clear view of the state of the membrana tympani, which appeared dull and dry. The unpleasant noise the patient had formerly complained of was now removed, and from this time his hearing daily improved, to the great delight of the sufferer.

The medicated vapour douche used daily. After several sittings, the vapour passed freely into the tympanical cavities, and his hearing gradually increased. The contraction was dilated by tents, and the auditory passage anointed with Ung. Hydrarg.; Nitrat. dilut., and Ung. Iodidum Comp.

rubbed behind the ear, and on the mastoid cells; at the same time, Deut. Sarsæ. concentrated with Potassæ. Iodidum, administered. Under this treatment for six weeks, his hearing functions were restored and cured.

P.S. This gentleman had been under the treatment of an aurist five months, without receiving any benefit, and said that his deafness was increased.

BOOKS RECEIVED.

The Transactions of the Veterinary Medical Association. Edited by W. J. T. Morton. Vol. 1, No. 4.

Galen on the Hand.

Edinburgh Medical and Surgical Journal. Oct. 1842.

Guy's Hospital Reports. Oct. 1842. Pharmaceutical Journal and Transactions. Oct. 1842.

On Acute Ulceration of the Duodenum in Cases of Burn. By T. B. Curling, Lecturer on Surgery, and Assistant-Surgeon, London Hospital.

Retrospect of the Progress of Medicine and Surgery for the Year 1841-2. By Mr. E. O. Spooner and Mr. W. Smart.

Observations regarding Medical Education; in a Letter addressed to the President of the Royal College of Surgeons. By John Simon, Demonstrator of Anatomy in King's College, London, &c.

Report on the chief Results obtained by the Use of the Microscope in the Study of Human Anatomy and Physiology. By James Paget, Demonstrator of Morbid Anatomy at St. Bartholomew's Hospital, &c.

Elements of Physiology for the Use of Students, and with especial reference to the wants of Practitioners. By Rudolph Wagner. M.D. Translated from the German, with Additions, by Robert Willis, M.D. &c. Part II. Of Nutrition and Secretion.

The Parent's Hand-Book; or, Guide to the Choice of Professions, Employments, and Situations. By J. C. Hudson, Esq. Author of "Plain Directions for making Wills."

ROYAL COLLEGE OF SURGEONS.

LIST OF GENTLEMEN ADMITTED MEMBERS.

Friday, October 14, 1842.

T. Peat.—J. Moore.—H. D. Scholfield.—J. Rhodes.—W. Boyd.—C. Telfair.—J. Vickerman.—J. I. Acheson.—J. M. Best.

Friday, October 21, 1842.

W. D. Marchant.—C. Wrixon.—W. H. Hole.—J. A. M'Donogh.—J. J. Horton.—J. Lancaster.—R. Bunce.—E. Haddock.—H. Hill.—C. Bond.—W. E. Taylor.—R. W. Woolcombe.—J. Gerrard.—W. M. H. Day.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

October 13, 1842.

J. W. Beresford, Macclesfield.—W. E. Taylor.—W. Fraser, Sunderland.—H. S. Lyford, Winchester.—W. Sewell, Bowness.—J. Corrie, Thornton, Bradford.—S. S. Perkins, Exeter.—T. Ager, Castle Hedingham.

A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, October 15, 1842.

Small Pox	6
Measles	21
Scarlatina	36
Whooping Cough	18
Croup	8
Thrush	5
Diarrhoea	14
Dysentery	4
Cholera	0
Influenza	0
Typhus	29
Erysipelas	10
Syphilis	0
Hydrophobia	0
Diseases of the Brain, Nerves, and Senses ..	119
Diseases of the Lungs and other Organs of Respiration	246
Diseases of the Heart and Blood-vessels	16
Diseases of the Stomach, Liver, and other Organs of Digestion	66
Diseases of the Kidneys, &c.	7
Childbed	11
Ovarian Dropsy	0
Disease of Uterus, &c.	0
Rheumatism	3
Diseases of Joints, &c.	2
Ulcer	0
Fistula	1
Diseases of Skin, &c.	1
Diseases of Uncertain Seat	114
Old Age or Natural Decay	67
Deaths by Violence, Privation, or Intemperance	18
Causes not specified	3
Deaths from all Causes	824

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude 51° 37' 32" N. Longitude 6° 3' 51" W. of Greenwich.

October.	THERMOMETER.	BAROMETER.
Wednesday 19	from 37 to 45	29.24 to 29.45
Thursday . 20	26 43	29.55 29.68
Friday . . 21	23 42	29.80 29.90
Saturday . 22	21 45	29.65 29.79
Sunday . . 23	40 46	28.80 28.86
Monday . . 24	29 44	29.11 29.45
Tuesday . 25	29 46	29.54 29.31

Wind N. and N.W. on the 19th; W. by S. on the 20th; W.S.W. on the morning of the 21st, N.W. afternoon; S.W. on the 22nd and 23rd; N.W. on the 24th; and S.W. on the 25th.

The 19th, 20th, and 21st, generally clear; since, except the evening of the 24th, generally cloudy, with frequent rain.

Rain fallen, 965 of an inch.

CHARLES HENRY ADAMS.

WILSON & OGILVY, 57, Skinner Street, London.

THE
LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, NOVEMBER 5, 1842.

LECTURES

ON THE

THEORY AND PRACTICE OF
MIDWIFERY,

*Delivered in the Theatre of St. George's
Hospital,*

BY ROBERT LEE, M.D. F.R.S.

LECTURE IV.

*On the Physiology of the Unimpregnated
Uterus and its appendages.*

At the age of maturity, when the uterine system is fully developed, menstruation commences. The appearance of the discharge from the uterus is usually preceded by constitutional disturbance, sense of weight within the pelvis, pain in the back and loins, and other symptoms of congestion of the blood-vessels of the uterus, and irritation of its whole nervous system. These subside as the catamenia or menses flow; and in some women they are so slight as scarcely to be observed. The discharge takes place every four weeks, or lunar month, and lasts two, three, four, five, or more days, and is accompanied by the detachment or exfoliation of the delicate epithelium of the mucous membrane of the uterus, which is soon reproduced. In some it continues only two days, in others three, and in a few eight or even more. The usual period is from three to six days; the largest quantity escaping on the second and third; and it most frequently returns at intervals of three or four weeks. The intervals between the periods of menstruation are, in some, invariably the same; in others they are unequal by several days. Its periodical return is accompanied frequently with the local and constitutional symptoms described.

It is difficult to ascertain the precise
779.—XXXI.

quantity of menstrual fluid which is discharged at each period. It probably varies from three to six ounces; but the same persons have often more at one period than another; and there is a great difference observed among women, not only in the quantity, but in the duration of each menstrual period, and the length of the intervals between them.

The fluid has a red colour, like blood; in some florid, like arterial blood; and in others of a darker colour, like venous blood. In the healthy condition blood corpuscles can be detected in it. It contains much less fibrine than blood, and does not generally coagulate, nor become decomposed when preserved for any length of time. Professor Brande analysed the menstrual fluid once; and he says it has all the properties of a very concentrated solution of the colouring matter of the blood, in a diluted serum. It was fluid which had long been accumulating in the vagina. Gmelin states that it contains no globules, is green by transmitted light, and resembles a strong solution of the colouring matter of the blood in serum. In a case where the fluid had been retained for some time by an occlusion of the vagina, it appeared as a thick, glutinous, reddish-brown syrup, without any smell: three days' exposure to the air produced no change in it; there was no deposit or coagulum, nor any approach to putrefaction: it was liquified by potash, and thickened by sulphuric acid and alcohol: water, in which it was immersed, took very little of its colour, but subsequently became clouded by evaporation, and as if coagulated on the action of alcohol. About two years ago I saw a similar case of occlusion of the vagina, in which a quantity of fluid similar to that now described had accumulated; but, on being kept for some days, it became decomposed as blood would have done. I believe we are still in want of a good chemical analysis of healthy menstrual fluid. One thing respect-

M

ing it is certain, whatever its chemical composition may be, that it has none of the irritating noxious qualities which were attributed to it by Pliny, Columella, and some modern writers. Galen knew that it proceeds from the inner surface of the uterus, and that it is different from blood. In cases of prolapsus of the uterus, it has been seen flowing from the os tinæ, and from the lining membrane where the uterus has been inverted. "In a natural evacuation of blood, viz. menstruation," says Mr. Hunter, "it is neither similar to blood taken from a vein of the same person, nor to that which is extravasated by an accident in any other part of the body; but is a species of blood changed, separated, or thrown off from the common mass, by an action of the vessels of the uterus similar to that of secretion; by which action the blood loses the principle of coagulation, and, I suppose, of life." Most physiologists have adopted this view of menstruation, and consider it as a peculiar function of the lining membrane of the uterus, analogous to secretion.

It has been stated by almost all writers, that women reach maturity, and that menstruation commences, much earlier in hot climates, particularly between the tropics, than in temperate and very cold countries. Haller states, that in the warm regions of Asia, the catamenia appear from the eighth to the tenth year; and in Switzerland, Britain, and other temperate regions, at the age of twelve or thirteen, and later the farther we ascend towards the north. The same view is taken by Denman, Burns, and Dewees, who have inferred that, like plants, animals reach maturity sooner in hot than cold countries. Dewees says menstruation occurs later in the northern than southern States of America.

"The early or late appearance of the menses," observes Dr. Denman, "may depend upon the climate, the constitution, the delicacy or hardness of living, and upon the manners of those with whom young women converse. There seems to be an analogy between the effect of heat upon fruits and the female constitution, with respect to menstruation; for the warmer the climate, the sooner the menses appear. In Greece and other hot countries, girls begin to menstruate at eight, nine, and ten years of age; but, advancing to the northern climates, there is a gradual protraction of the time till we come to Lapland, where women do not menstruate till they arrive at maturer age; and then in small quantities, at long intervals, and sometimes only in the summer." Müller repeats this in the last volume of his *Physiology*.

Mr. Robertson, of Manchester, has pub-

lished, in the North of England, and Edinburgh Medical and Surgical Journals, several elaborate and extremely interesting papers, containing numerous facts to prove that, in this country, the natural period of puberty in women occurs in a much more extended range of ages, and is more equally distributed through that range, than authors have alleged; and that, in other countries, the parallel between plants, fruits, and the female constitution, does not hold good. The following table shews the ages at which 450 women began to menstruate in Manchester:—

10 at 11 years of age.	
19 — 12	"
53 — 13	"
85 — 14	"
97 — 15	"
76 — 16	"
26 — 18	"
23 — 19	"
4 — 20	"

In five sisters it commenced at eleven, and one was a mother at 12: rendering it probable that the period of puberty depends on constitutional and probably hereditary peculiarities.

The following table, shewing the ages at which eleven hundred women began to menstruate in London, corroborates the preceding statements respecting the extended range of ages in which puberty occurs:—

11 began to menstruate at 9 years of age.			
55	"	"	10
52	"	"	11
86	"	"	12
153	"	"	13
204	"	"	14
201	"	"	15
154	"	"	16
101	"	"	17
78	"	"	18
33	"	"	19
23	"	"	20
6	"	"	21
2	"	"	22
1	"	"	23

At Göttingen, Osiander ascertained the ages at which 137 women began to menstruate. In 21 of these the catamenia first appeared at 14; in 32 at 15; and in 24 at 16 years of age. Nine began at 12, and one not before the 24th year.

In 77 women observed by Mr. Robertson, 1 ceased to menstruate at the age of 36: 4—40: 1—42: 1—43: 3—44: 4—45: 3—47: 10—48: 7—49: 26—50: 2—51: 7—52: 2—53: 2—54: 1—57: 2—60: and one at the age of 70.

Of 132 women in London, I ascertained with certainty that menstruation ceased in—

1 at 22 years of age.	
1 — 24	"
1 — 30	"
2 — 34	"
2 — 35	"
1 — 36	"
1 — 37	"
3 — 38	"
4 — 39	"
13 — 40	"
4 — 41	"
7 — 42	"
10 — 43	"
9 — 44	"
14 — 45	"
7 — 46	"
2 — 47	"
10 — 48	"
7 — 49	"
10 — 50	"
4 — 51	"
7 — 52	"
4 — 53	"
2 — 54	"
4 — 55	"
2 — 56	"
1 — 62	"

Mr. Robertson has collected together many facts which tend to prove that, in other countries, there is no parallel between plants and the female constitution. He quotes passages from the travels of Hearne, Back, Lyon, and Dr. Richardson, to prove that the North American, Cree Indians, Copper Mine Indians, and Esquimaux, frequently begin to menstruate at twelve, thirteen, and fourteen years of age. From the statements of Baron Humboldt, the same is equally true of the Korriacs, and the tribes of Northern Asia, where girls of ten years are sometimes found mothers. The notion that women in Lapland do not menstruate till twenty, and only in summer, is founded on a mistake committed in the translation of the following passage in Linnæus's "*Flora Lapponica*." "*Hoc etiam musco catamenia excipere abstergereque feminas lapponicas mihi relatum fuit. Naturam æque hic ac alibi sibi similem esse, feminasque in Lapponia legibus menstruorum similibus obedire: dubium nullum est, licet hæ cruoris minorem fundant copiam innocentissimè. Fuere et feminæ plures hic quas vidi, per totam suæ vitæ periodum, ab hac lege exceptæ, licet hæ maritatæ steriles persistant. Novi et juvenulas quæ non hyme, sed solâ modo æstate has observabant crises: imo et alias, quæ semel in anno purgabantur, et hæ, quot quot vidi, pedes oedematosos habebant.*" Tooke states that the Slavonian or native Russians reach puberty at an early age, at their twelfth or thirteenth year; and that the same is the case with the Samoiedes, Korriacs, and Kamschatdales. In the Crimea, and in all

the Russian provinces along the Black Sea, and in the Ukraine, I had good opportunities, during three years, of ascertaining the period when menstruation usually commences and ceases, and all the derangements to which this function is liable, in the higher and lower classes; and my conviction is, that over the whole South of Russia, the usual period of puberty is the same as in Great Britain, and that women cease to bear children at the same age. Mr. Robertson refers to the works of Mr. Crawford and Sir Stamford Raffles for proofs that the same is the case in Java, and in all the islands of the Indian Archipelago; and that the body continues to grow there as long, and that women bear children to as late a period of life, and that longevity is as frequent as here. From the statements of Dr. Winterbottom, the same is the case with Sierra Leone. Mr. R. thinks that the early marriages, and the universal licentiousness and depravity of morals which reign in Arabia, will account for any difference observed in that country.

Mr. George Babington, Surgeon to St. George's Hospital, has informed me, from an examination of documents at the Statistical Society, that the period of puberty in the island of Grenada is the same as in this country; and Mr. Young, formerly a pupil of this class, and now in the West Indies, has communicated to me the same fact with respect to the island of Barbadoes.

In the 152d vol. of the Edinburgh Medical and Surgical Journal, which has recently appeared, and in the MEDICAL GAZETTE, vol. xxx. p. 677, Mr. R. has published a paper on the period of puberty in negro women, and has given a table from Jamaica, from which it appears that in 12 negresses the menses appeared in one aged 16: 3—15: 3—14: 3—13: and in 2 aged 12 years. It is stated by the Reverend Messrs. Elliot and Harvey, who communicated this information, that they could have added many cases of negresses from 8 to 11 years of age, in whom there is as yet no menstrual appearance.

Dr. Nicholson, of St. John's, Antigua, states after being 19 years in the island, with extensive opportunities for accurate observation, that he has never met with a case of menstruation before the 12th year, either in whites or blacks, but he has met with a few cases at that age both in whites and blacks and in the mixed race; that such cases are rare is proved by the fact of his having been consulted professionally on account of that circumstance. He states further that menstruation commences most frequently in the 14th and 15th years, and that no difference exists in this respect between blacks and whites, but cases of tardy menstruation from chlorosis are more frequent with the latter. This he does not attribute to any constitutional

difference existing in these races, but to local causes affecting the individual ; such as miasmatic effluvia, to which the blacks are more exposed. Dr. Nicholson adds that he has never met with a case of pregnancy before menstruation, but that irregular monthly discharges during pregnancy, in every respect resembling the catamenia, are not unfrequent occurrences in Antigua, particularly with white females of a sanguine temperant.

It is, however, right to state, that some gentlemen who have resided many years in the East Indies, the Brazils, and on the coast of Africa, with whom I have conversed on this subject, and who have had good opportunities for observation, are of a contrary opinion, and still firmly believe that the period of puberty is earlier between the tropics than in Europe. As none of them investigated the subject, I think, with the requisite care, their evidence can have little weight when contrasted with the great mass of facts now adduced to support the opposite view. It has been stated that women who have been born in the East Indies, and who have been sent to England at an early age, begin to menstruate before the usual period, in this country. I have seen a considerable number of cases which prove that there are numerous exceptions to this.

Menstruation is suspended during pregnancy, and generally during suckling, for six, eight, or ten months, or longer : some pregnant women have periodical discharges of blood from the uterus, but regular menstruation is rarely if ever observed during utero-gestation. I have never seen an unequivocal example of it, and Dr. Denman, in the course of his long experience, never met with a case. In some children whose uterine system has been prematurely developed, menstruation has commenced at a very early period of life, and it has then sometimes been accompanied with chorea or hysteria.

The function of menstruation is peculiar to the female of the human species, and from the earliest historical records of our race, it is known that this function was performed periodically in the most remote ages as it is at the present time. The first appearance of the catamenia at the age of puberty, its suspension during pregnancy and lactation, and its cessation in advanced years, are circumstances which prove that it is intimately connected with the process of reproduction.

Some physiologists think that menstruation puts or preserves the uterus in a state fit for impregnation ; but the function is never performed unless the uterus is previously in a healthy condition. It might be affirmed with equal truth, that the secretion of bile puts or preserves the liver in a healthy state ; the urine the kidneys ; and the gastric fluid the coats of the stomach. That the uterus can be in a fit state for conception without menstrua-

tion is proved by this fact—that some women have become pregnant who have never menstruated, and many have conceived during suckling who have not menstruated since their previous conception, or even during successive pregnancies and the intervals of suckling.

Some have attributed menstruation to the influence of the moon, to the upright position of women, to the presence of an undue proportion of azote in the blood of the uterus, fermentation of the blood, sexual desire, and many other hypothetical causes. It has been referred, with greater reason, since the days of Aristotle, to a periodical plethora of the vessels of the uterus—a molimen, irritation, or effort, of the uterine system every month, but no adequate cause has been assigned for this. The sensations usually experienced at the time the catamenia are present, and the examination of the bodies of those who have died from disease during menstruation, prove that the uterine arteries and veins are then distended with blood. Blood is not unfrequently extravasated with the catamenial fluid, and if the uterus be examined during the monthly period, it is usually found to be larger and heavier than during the intervals of menstruation. That something more than a mere determination of blood to the uterine system is required for menstruation will appear from the fact that suppression of the catamenia is not unfrequently produced by unusual congestion of the uterine vessels, and that the obstruction is removed by local abstraction of blood.

That the determination of blood which takes place to the uterine system every month, and that all the phenomena of menstruation, depend upon the ovaria, and that at each period a Graafian vesicle bursts and its contents escape, is rendered extremely probable by the following facts.

If the ovaria are wanting, or removed artificially, or have their healthy structure destroyed by disease, menstruation either never commences or it entirely ceases. The case of a young woman who died at the age of 29, in whom the ovaria were wanting, was published by Mr. Charles Pears, in the *Philosophical Transactions* for 1805, and the following appearances have been recorded. " Having ceased to grow at ten years of age, she was in stature not more than four feet six inches high. The breadth across the shoulders was as much as fourteen inches, but her pelvis measured only nine inches from the ossa ilia to the sacrum ; her breasts and nipples never enlarged more than in the male subject. She never menstruated, there was no appearance of hair on the pubes, nor were there any indications of puberty in mind or body, at twenty nine-years of age."

In the young woman whose ovaria were extirpated by Mr. Pott, in an operation for

inguinal hernia, the voice became hoarse, the mammae shrunk, and hair appeared on the chin and upper lip. Before the operation, this female was stout, large-breasted, and menstruated regularly.

Menstruation disappears if the structure of both ovaria be destroyed by any disease. In ovarian dropsy, if one ovary only be affected, menstruation continues until the powers of the constitution are greatly impaired, but if the disease exists in both ovaria from the beginning, the function is soon interrupted. The same effect is produced if the structure of the ovaria be disorganized by any other disease. A woman, aged 21, died in 1836, in St George's Hospital, from tubercular phthisis, and both ovaria and fallopian tubes were completely changed by scrofulous disease. She never menstruated, and the uterus was like the uterus of a child, with a long neck and small body. In many young women who die of chronic disease, the ovaria are flaccid, and extremely small. Something not very dissimilar to these effects in the human subject when the ovaria have been removed, has been observed by Mr. Yarrell in birds. He has shewn that where there is a shrinking and shrivelling of the ovaria from disease in young birds, the hen bird, in many instances, assumes the plumage of the male. Thus, in several mules (hen birds with male plumage) the ovarium has been found variously diseased: sometimes the oviducts appear to have been inflamed, and adhesion to have taken place between their opposite sides, so that they become obliterated; at other times the ovaria are shrivelled, and of a black colour, and appear as if they had never been in progress to maturity. This black colour also pervades the oviduct, which is smaller than natural, and often impervious in some part. In old birds it might fairly have been alleged that the destruction of the ovarium and the change of plumage followed only the general obliteration induced by age, and that the one was not dependent on the other: but the fact that destruction by disease of the ovarium, in the young bird, induces a similar change, and the destruction of the oviduct by art, being followed by an alteration, incomplete indeed, but, in many respects, resembling the one mentioned, sets the question at rest.

In cases where the uterus has been wanting, and the ovaria have been present and fully formed, women have usually experienced violent pains within the pelvis every month, and all the symptoms of menstruation have been present except the discharge.

In 1831, I saw a case, with Dr. Girdwood, in which there appeared to be a deficiency of the uterus, and an effort at menstruation every monthly period. The woman was 25

years of age, and had been married two years, though she had never menstruated. Every month there was great pain in the region of the pelvis, which lasted for several days, and then went off, without any menstrual discharge taking place. The mammae and external sexual organs were fully developed. On examination at the posterior part of the vagina, the finger readily passed into a short cul de sac, about an inch and a half in length, but there was no uterus above.

Dr. Stein related a case several years ago to a Medical Society in Berlin, of a married lady, æt. 24, well formed, and the mammae fully developed, whose vagina was found imperforated; and in performing the necessary operation, no uterus could be discovered, but its place was supplied by a soft mass of cellular tissue. She had never menstruated, though there was a regular effort at each catamenial period. Other cases similar to these have been recorded by authors. One very distinct case of this kind came under the observation of Dr. Elliotson and Mr. Cline; there was no uterus, but there was excruciating pain about the pelvis every month: the ovaria had certainly been developed.

On the 11th of March, 1831, I examined the body of a young woman who died, during menstruation, from inflammation of the median basilic vein. The left ovarium was larger than the right, and at one point a small circular opening, with a thin irregular edge, was observed in the peritoneal coat, which led to a cavity of no great depth in the ovarium. Around the opening, to an extent of three or four lines, the surface of the ovarium was of a bright red colour, and considerably elevated above the surrounding part of the peritoneal coat. On cutting into the ovarium, its substance around the opening and depression was vascular, and several Graafian vesicles, of different sizes, were observed. The right ovarium was in the ordinary state. Both fallopian tubes were intensely red and swollen, and their cavities were filled with what appeared to be menstrual fluid. The lining membrane of the uterus was coated with the same fluid, and the parietes were soft and vascular. The size of the uterus was not increased. I pointed out this opening in the peritoneum of the ovary, which I accidentally observed, to Dr. Girdwood and Dr. Prout, and suspected that there was some relation between this and the state of the uterus. At this time I had not seen the human ovum in the Graafian vesicle before impregnation, and was not then aware that cicatrices are never present on the surface of the ovaria before menstruation has commenced.

In the autumn of 1831, Dr. John Prout saw a woman, under 20 years of age, who died suddenly from acute inflammation of

the lungs while menstruating. He examined the body, and brought the uterine organs to me, having taken the greatest care that they should not suffer from any force during their removal from the pelvis. A red, soft, elevated portion of the right ovary was also here observed, and at one part the peritoneal coat, to a small extent, had been removed. The edge of the opening was extremely thin and irregular; and in the substance of the ovary, under the opening, was an enlarged Graafian vesicle, filled with transparent fluid. Numerous small blood-vessels were seen running along the peritoneal coat of the ovary to the opening. When the substance of the ovary was laid open, several vesicles, of various sizes, and at different depths, were found imbedded in it. The left ovary presented a natural appearance. The free extremities of the fallopian tubes were gorged with blood. Their cavities were filled with a red-coloured fluid. The uterus was not enlarged, but the parietes were unusually full of blood, and the lining membrane of the fundus was coated with menstrual fluid. A small coagulum of blood likewise adhered to the upper part of the uterus. I now felt convinced that there must be some connexion between this state of the ovaria and menstruation, and mentioned the facts to Sir Astley Cooper.

On the 2d of July, 1832, Sir Astley sent me the ovary of a woman who died from cholera while menstruating. The ovary was much larger than natural, and at one point there was a small irregular aperture in its peritoneal coat, through which a portion of a slender coagulum of blood was suspended. On cutting into the substance of the ovary it was found to be occupied with three small cysts or cavities, one of which was filled with a clear ropy fluid, another with semi-fluid blood, and the third, which communicated with the opening in the peritoneal coat of the ovary, with a firm coagulum.

On the 18th of November, 1832, Dr. Girdwood and Mr. Webster removed the uterine organs from the body of a young woman who had died suddenly the preceding day, when the catamenia were flowing. Both ovaria were remarkably large; and both fallopian tubes were red and turgid. The peritoneal coat of the left ovary was perforated, at that extremity which was nearest to the uterus, by a circular opening, around which aperture, for several lines, the surface of the ovary was slightly elevated, and of a bright scarlet colour. The margin of this opening was thin and smooth, and did not appear to have been produced by any external force. Its centre was slightly depressed below the level of the edges, but there was scarcely the appearance of a cavity beneath. The right ovary was much

larger than the left; and when cut into, a cyst or cavity was seen filled with half coagulated blood. The peritoneal coat of the ovary was entire. The uterus was large, and when cut into appeared to contain an unusual quantity of blood. The inner membrane was of a bright red colour, and coated with a thin layer of catamenial fluid. Both fallopian tubes were red and turgid, and the interior of the left was filled with menstrual fluid. The appearances now described have been very accurately represented by Mr. Joseph Perry in this drawing [exhibiting it], which was made from the parts in the recent state.

On the 14th of January, 1837, a woman, thirty-seven years of age, who had long suffered from hysteria, died suddenly in St. George's Hospital, during menstruation. No morbid appearance was found to account for her death. A small circular aperture was observed in the peritoneum of the left ovary. This opening communicated with a cavity in the substance of the ovary, which was surrounded with a soft yellow substance of an oval shape. In the preparation [exhibiting it] you see the aperture in the peritoneal coat of the ovary, and the cavity with which it communicates. This aperture would probably not have been detected if the parts had not been covered with pure water.

On the 31st of May, 1841, Mr. A. Shaw was present at the inspection of the body of a woman who died during menstruation in the Middlesex Hospital. In the right ovary, he says, the appearance was presented of one of the Graafian vesicles having been recently ruptured. A part of the surface, of the size of a fourpenny piece, was distinguished by a dark stain upon it; and here the peritoneal coat was slightly elevated, and the ragged edges towards the centre of the stained spot were of a particularly black colour.

In Dr. Gendrin's *Traité Philosophique de Médecine Pratique* (1839) there is a description of the same state of the ovaria in five women who died during menstruation. In the first the left ovary was vascular, and in the middle was an aperture about a line in diameter, with an irregular margin. Its cavity would have contained a hemp seed, its walls were red, and it was obviously a ruptured Graafian vesicle. In the second case a small circular ragged opening led to a cavity two lines in diameter, the walls of which were of a bright red colour. In the fourth the right ovary had an aperture a line and a half in diameter, leading to a small cavity, with vascular walls. M. Negrier has given an account of similar appearances in the ovaria during menstruation, and in this figure [exhibiting it] has represented the ovary of a young woman who died

eight days after the catamenial period. It resembles exactly the drawing on the table, without the colouring. A warm controversy has been carried on between M. Negrier and Dr. Gendrin on the priority of the discovery, and they appear to have been wholly unaware, which adds much to the importance of their observations, that an account of precisely the same appearances had not only been published, seven years before, in the 2d Vol. of the *Cyclopædia of Practical Medicine*, but fifty-eight years before in the *Philosophical Transactions*, by Mr. Cruickshank. "I also have in my possession the uterus and ovaria of a young woman," he observes, "who died with the menses upon her: the external membranes of the ovaria are burst at one place, from whence I suspect an ovum escaped, descended through the tube to the uterus, and was washed off by the menstrual blood." There is no further observation made in this paper from which it can be inferred that Mr. Cruickshank supposed all the phenomena of menstruation to depend on this state of the ovaria. Even as early as 1672, it appears Kirkringius believed that ova were sometimes discharged from the ovaria during the monthly periods; for he says, "*Aliquando foeminæ deiciunt hæc ova, imprimis tempore menstruorum.*" I have not had time to examine the work of Kirkringius, to ascertain whether he states this from an actual examination of the ovaria of women who died during menstruation, or if he adopted the opinion on purely hypothetical grounds, as Dr. Power did, and stated in his *Essay on the Periodical Discharge of the Human Female*, published in 1832.

MICROSCOPIC RESEARCHES IN ANATOMY.*

By R. D. GRAINGER,
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GENTLEMEN,—In accordance with the wishes of my colleagues, I have undertaken to give a brief description of the results which have recently been obtained in the science of anatomy by microscopic research. In the presence of several of the most accurate observers of the day, it might seem to be superfluous to point to the various departments of anatomy and physiology, animal and vegetable, which have been enriched by the contributions of English and Continental microscopists. It has, however, been con-

sidered, that as many of the gentlemen who have favoured us with their presence this evening, and especially those unconnected with the profession, may not be so familiar with the progress of minute observation, a reference to some of the more important discoveries which have by this means been made will not be altogether devoid of interest or utility. It must be apparent to those who have noticed, even in the most cursory manner, the rapid progress of microscopic research, that it will be impossible, on the present occasion, to enter into any detailed account of the isolated and various steps by which the existing knowledge on this subject has been attained. It must rather be my object to present to your notice a sketch of some of the leading facts which have been established by the labours of so many observers, and to point to a few of the more important inferences which the accumulated information we now possess seems to warrant.

Notwithstanding the great and important additions for which we are indebted to the microscope, it has been, and still is, too much the custom to regard this instrument as more calculated to amuse the curious than to instruct the studious; as more fitted to amaze the ignorant than to enlighten the learned.

Many of those, again, who admit the importance of determining by microscopic investigation the structure of organized bodies, assert that the conflicting opinions of observers imply defects in the mode of investigation, which, until they have been more successfully rectified than has heretofore been effected, justify a doubt as to the accuracy of all such inquiries. But an unprejudiced consideration of what has been accomplished by the microscope will, I feel satisfied, convince you, that although these inquiries are, like all the higher departments of human knowledge, beset with difficulties, they have led to an infinitely more satisfactory acquaintance with the essential characters of organized bodies, and the laws of formation, than was formerly possessed. The most conclusive answer which can be given to all such objections is, that if it be admitted that the aim of the anatomist is to discover the true structure of the human body, he must either avail himself of the use of this instrument, which affords the only means of rendering the internal composition of the several organs apparent to the senses, or rest satisfied to abandon, as beyond his power of demonstration, those very parts of the animal frame which are of the deepest interest to the physiologist and practitioner of medicine. Let us suppose, for instance, that the student traces, by the most careful dissection, the arteries, the veins, and tubes of the kidney, so far as they are visible to the naked eye, he will yet have discovered nothing

* We feel it right to state, that as the meeting included a considerable number of non-professional persons, this paper is necessarily restricted to general allusions, minute details appearing to Mr. Grainger unfitted for a mixed audience.—ED. GAZ.

of the complex machinery by which the secretion of urine is accomplished; and so, in fact, we might adduce every organ of the economy—the bones, muscles, and nerves, none of which can be displayed in their internal and essential parts to the unaided senses.

In proceeding to the more immediate object of this address, I would, in the first place, solicit your attention to some of those microscopic researches by which vegetable anatomy and physiology have been enriched. By selecting some of the more simple or cellular plants, where the typical structure is displayed unobscured by the addition of parts which, in the higher classes, renders the task of investigation so much more difficult, the botanist is enabled, with the assistance of the microscope, to demonstrate that tendency to the spiral disposition of the component parts, which so strongly pervades the vegetable kingdom. If, for example, we examine the different species of *confervæ*, it will be seen that the organic corpuscles are deposited in spirals.

A process evidently of the same kind was noticed by Schleiden, and has since been pointed out by Mr. E. Quekett, in the development of the vascular tissue of the higher plants. The latter observer has ascertained that the membranous tube which precedes the vascular tissue becomes charged with innumerable granules, which, after a short time, begin to adhere to the inner surface of the tube, assuming a spiral direction or form, and thus lay the foundation, as it were, for the vascular tissue. Again, if we watch the circulation of the *chara*, which, as a microscopic object, almost rivals in interest the circulation of the blood, something of the same kind is noticeable; that is to say, the little globules which indicate the currents going on in each cell of this plant, follow in the larger cells a definite spiral direction, so that while the globules describe curved currents, there are intervals, called by Dutrochet lines of repose, where no motion takes place. In these instances we have an opportunity of perceiving, in its simplest but most evident manifestation, that spiral form which is so eminently displayed in the whole vegetable kingdom.

And here I would remark, that one of the most important principles established by modern research is, that the anatomist, in determining the fundamental character of any organ, must seek for it in the lower forms of organic beings, where the typical structure is displayed in all its simplicity.

Another important addition to vegetable anatomy was the discovery, by Schultz, of the vessels by which the circulation of the elaborated sap, or latex, is accomplished. Previous to these researches nothing could be more unsatisfactory than our knowledge

respecting the channel by which that fluid which is to the plant what the arterial blood is to the animal, was carried to the organs which it is designed to nourish. The existence and actions of these vital vessels, as they were called by Schultz, have been almost universally admitted; there are, however, some careful microscopic observers who have not been able to satisfy themselves that a true circulation does, in reality, go on in the vessels we are describing. One gentleman possessing a very superior instrument, has repeatedly sought for the currents described, but so long as his observation was confined to the living plant in an un mutilated condition, no motion could be seen; but on making an incision, movements, which were attributed to the escape of the fluids, were observed. Without dwelling further on this point, I would only remark, what is familiar to many who are present, that motions are occasionally seen in fluids which have been mistaken for vital phenomena, although they, in reality, depend on physical causes, such as those seen in the red particles when a drop of blood is placed in the field of the microscope, or in the capillary vessels of the frog's foot when severed from the body.

I have now to allude to a series of investigations which have thrown a new and unexpected light on some of the most important laws which regulate the growth or formation of organized structures. I refer to the anatomy and physiology of cells. Although so much has been written upon this subject, a brief notice of the discoveries of Schleiden and Schwann may, perhaps, be permitted on this occasion. The first great truth which these investigations have revealed is, that although nature displays infinite variety in the secondary formations of animals and vegetables, yet that in the primary development of the several organs, one form alone, that of a nucleated cell, is observed. The mode of origin of this primordial cell appears to be as follows: the minute granules existing in the primitive plastic, but as yet unformed substance, aggregate together, and so form a small and usually disc-shaped body, which, being the rudiment or origin of the future cell, was called by Schleiden the *cytoblast* or cell-germ, though the term of nucleus, first given to this body by our distinguished countryman, Dr. Robert Brown, is still very generally retained. According to Schleiden, it is doubtful if the cytoblast is in reality the true germ of the cell; for he remarks, that in the cytoblast itself a minute sharply-defined object, presenting the appearance of a thick ring, or thick-walled hollow globule, is observed, which, forming even earlier than the nucleus, is called the *nucleolus*. From the surface of the cytoblast there rises subsequently a thin transparent vesicle; and this

it is which constitutes the walls of the cell. The celebrated German anatomist, Schwann, has demonstrated that the same identical phenomena which thus occur in the vegetable are also exhibited in the animal kingdom: and thus we learn, that whether a corpuscle of blood, a fibre of muscle, a filament of nerve, or a vessel, is destined to be formed, the foundation of each is a cell containing a nucleus, which, undergoing a series of transformations, may be ultimately converted first into a tube and then into a fibre.

This is a brief account of one of the most brilliant discoveries which, perhaps, has ever been made in connexion with the science of organization. The great principles it establishes respecting the formation of animal and vegetable tissues have been universally adopted, although some modifications, and those not unimportant ones, have been introduced by other observers into the theory as originally announced by Schleiden and Schwann. Those physiologists supposed that the nucleus or cytoblast, having performed what they conceived to be its specific office—the formation, namely, of the cell—was cast off as useless, and absorbed. Further inquiries, both in Germany and England, have shown, however, that the nucleus is a much more important organ than was originally imagined. Thus Rosenthal contends that the nuclei serve to the reproduction of the organic tissues, by becoming elongated into fibres; and Reichert, although he condemns this theory as hypothetical, conceives that Rosenthal's inquiries have shown that the nucleus does not disappear in the manner stated by Schwann. It is, however, in this country especially, that the importance of the cytoblast has been shown by Dr. Martin Barry. This distinguished observer contends, that instead of being removed after having formed the parent cell, the nucleus becomes the source of new cells; and as it is capable of dividing or multiplying itself, and of thus giving origin to objects endowed with the same properties as itself, the nucleus possesses in this kind of vegetative growth an almost illimitable power of increase. Without entering into the merits of this question, I may be allowed to point out, that although the power possessed by the primary cells, and by the tubes proceeding from them, of absorbing new matter and depositing this in their interior, was known to Schleiden and Schwann, as, for instance, in the formation of the spiral vessel of the plant, and of the muscular fibre in the animal; yet to Dr. Barry belongs the great merit of fixing the attention of physiologists on one of the most important points connected with the history of cells, the independent power, namely, in virtue of which they may increase almost *ad infinitum*. It is this endowment which is more particularly interesting to the physiologist, and to the

pathologist, as it is calculated to explain many of the phenomena connected with nutrition and secretion, as well as the growth of carcinomatous and other tumors.

This reference to the formation of the nucleated cell naturally leads me to speak of the ovum; for, strange as it may appear to some of my auditors, the new being or embryo, like all its individual parts, springs from a cell, or, more correctly, from its nucleus, called the germinal vesicle, or, from its discoverer, the vesicle of Purkinje. The limits of this paper are quite insufficient to allow me even to glance at those minute and extended researches, including numerous microscopic observations, by which our knowledge of embryology has been so remarkably enriched. I will merely call your attention to those admirable investigations of Dr. Barry, which have established, among so many other valuable results, the fact that by a process precisely the same as that described as taking place in the nucleus of the cell, the minute object discovered by Wagner, and called the germinal spot, gives origin to incipient cells, which fill the whole of the interior of the germinal vesicles. Ultimately two of these cells enlarging constitute the true germ, and then each giving origin to two other cells, the number becomes 4, 8, and so on, increasing in the ratio of geometrical progression.

The contributions to the minute structures of the various tissues are so varied, that the science of general anatomy has, within a comparatively short period, assumed a new and more important aspect; there is indeed no class of organs which has not been most carefully investigated. So extended have been these researches, that to notice them would require me to speak of every texture of the animal frame, and would thus lead to details altogether incompatible with the limits of this address.

By the judicious employment of the microscope, aided by minute injection and comparative anatomy, the characteristic corpuscles of bone, the peculiar tubuli of the teeth—and here I would especially point to the researches of Professor Owen on the dental organs of existing and extinct animals—the general structure of glands, the epithelium and cilia of mucous membrane, the ultimate fibrilla of muscle, the fibre of nerve, and the various fluids, normal and abnormal, have either been satisfactorily investigated or greatly elucidated.

Among these extended inquiries one or two subjects only can be briefly noticed. The discovery which perhaps promises the most important results is that of Henle, respecting the existence of a new element in the nucleus and even serous membranes—the epithelium." By this term, as now understood, is meant a layer of particles, which are generally considered to be modified nucleated cells, and which are essentially of the same

nature as those of the epidermis. Their form and number vary remarkably in the different organs where they are examined; for it must be understood that these peculiar bodies, although in some situations few in number, or even altogether absent, generally extend into the most minute divisions of the serous and mucous membranes; as, for instance, into the small tubuli of the secreting glands. They have been divided by Professor Henle into the tessellated, the cylindrical, and the ciliated. More lately, however, Mr. Bowman has ascertained that those called by Henle cylindrical are, in fact, prismatic in form; and he has added a fourth class, the spheroidal. As to number, in some organs, as in parts exposed to pressure—the mouth, the pharynx, œsophagus, and vagina, for instance, and especially in the glands, where they seem to form almost the whole mass of the mucous membrane of secreting tubes—they are most abundant; whilst in other regions, as the eustachian tubes and tympanic cavities, they are more sparingly distributed.

Late observations tend to show that these bodies take an active share in the process of secretion; indeed, if the researches of Mr. Goodsir be substantiated, it will be necessary to conclude that the epithelial nucleated cells are the immediate agents of that process. Mr. Goodsir conceives that the wall of each cell is the part which performs the secreting, and that the cells when they are full give way, and so pour the fluid into the beginning of the excretory duct. This theory implies the incessant destruction of the epithelium cells, which are supposed by Mr. Goodsir to be in a constant state of development, maturity, and atrophy.

One of the most curious facts connected with the epithelium is the existence, on its free or unattached surface, of an immense number of microscopic hair-like filaments, called cilia. These minute bodies, which present, when in action under the microscope, a beautiful spectacle, and of which so excellent an account has been given by Dr. Sharpey, although most abundantly distributed, are by no means co-extensive with the epithelium. They abound in all the lower classes of animals, even on the surface of some embryos, and especially in the mucous surfaces and passages. They have been lately discovered in most unexpected situations, as on the lining membranes of the cerebral ventricles, where they were first seen by Purkinje and Valentin; and on the surface of the pericardium and peritoneum in some of the lower animals: they have been doubtfully seen in the interior of the nerves by Valentin and Remak. One of the latest discoveries of these bodies is that of Mr. Bowman, who has seen them in action within the orifice of the secreting tube of the kidney.

“The last subjects, gentlemen, to which I shall direct your attention in connexion with

the investigation of the tissues by the microscope, is that relating to the ultimate structure of the muscular fibre, and as this is a point which at the present moment commands the attention of microscopic observers, I may perhaps be permitted to dwell upon it somewhat less briefly than on the topics previously noticed.”

The allusion which I made in the former part of this paper to the spiral arrangement in the vegetable kingdom, will tend to show the great importance of that disposition in one of the grand divisions of the organic creation. There are many facts familiar to botanists which will throw light on some views presently to be noticed, respecting the presumed existence in the animal kingdom of a similar principle of arrangement. It is known, for example, that by carefully tracing the spiral tissue of the plant through the several stages of its first development, and of its subsequent transformations, it can be demonstrated that various and sometimes even apparently most anomalous forms, such as annular vessels, dotted ducts, and reticulated cells, are produced simply by modifications of the fundamental or typical spiral fibre.

Now the animal kingdom presents, as it would seem, an exactly parallel transformation, in the structure of the breathing tubes or tracheæ. In the class insecta, it is familiarly known that the tracheæ, instead of being composed as in man and the other vertebrate animals, of interrupted and imperfectly closed rings, consist of a continued spiral and round filament. It has, however, been noticed by Burmeister, that in larger tracheæ, as in those of the locusta viridissima, the thread loses its cylindrical, and assumes a flattened form; and Sprengel has further ascertained the interesting fact, that in such larger tubes the spiral becomes interrupted, and forms, as in the apparently similar case of the annular ducts of plants, perfectly closed rings. But the exquisitely beautiful structure seen in the bilobed tongues of the musca vomitoria, or common horse-fly, affords a more palpable demonstration of this transformation of a continual spiral; for you will distinctly perceive that whilst the larger tubes of this remarkable organ are formed like the ordinary tracheæ of insects, that is to say of a continuous filament, the smaller tubes proceeding from it are composed of imperfect rings, of a horse-shoe form, and presenting in their divaricated extremities a peculiar percate appearance. When to these facts we add, that in one of the herbivorous cetacea, namely the dugny or fabled mermaid, the tracheæ is composed, as in insects, of the coils of a continuous cartilage, there can remain little doubt that the interrupted and imperfect rings of the windpipe of the vertebrata generally are in reality developed on the principle of a spiral.

A celebrated microscopical observer, M. Mandl, contends that a spiral arrangement is also observed in the cutaneous appendages of animals, as in the barbs and barbules of feathers, in the scales of fishes, and in the growth of hair.

Having thus cursorily noticed that there are evidences of a spiral arrangement in the animal kingdom, I may state that Dr. Barry conceives that this disposition is more or less displayed in the various fibrous organs of the body, and consequently in the muscular fibre. Most of the microscopic observers of muscle, from Leuwenhoeck, Borelli, and Hooke, to those of the present day, have however contended that the ultimate fibre is composed of a series of particles which have been variously compared to a line of beads, pearls, &c. The corpuscular theory has been lately supported by Mr. Bowman, in the admirable paper he has given on the structure of muscle. He supposes that the primitive fasciculi, or bundles of voluntary muscles, consist of elongated polygonal masses or particles, which bodies thus compose the primitive fibrilla.

According to Dr. Barry, whose views on this subject are familiar to many present, the ultimate muscular fibre is composed of a double spiral filament, which, for the sake of illustration, might be compared to the two strands of a twisted rope, to which objects, indeed, the fibre, when seen under the microscope, often bears a striking resemblance. In examining different specimens single spirals are occasionally seen, presenting in some instances an appearance exactly like the turns of a corkscrew; but the fully formed fibrilla seems, according to the account and drawings published, to be composed of two spirals. The formation of the spiral fibre of muscle and other organs, is first developed, according to Dr. Barry, in the red particles of the blood, of which process he has given a minute account. The plates in the Philosophical Transactions represent a coil of disc-like bodies, variously disposed within the elliptical corpuscles of reptiles, and the circular particles of the mammalia. And here I may mention, that it is an important part of Dr. Barry's general theory respecting the high importance of the cytotblast of nucleated cells, that the coils just mentioned are produced by the division and multiplication of the nucleus of the red particle.

Such are the accounts of two other most recent observers of the muscular fibre. It would, of course, be presumptuous indeed to attempt to decide the question; I will therefore merely mention one or two circumstances which may throw some light on this subject. That there is a peculiar spiral connected with the muscular tissue, is now admitted by the best observers. Dr. Barry has figured in one of his plates a spiral fibre

wound around a fasciculus; and some months previous to the announcement of Dr. Barry's researches, Dr. Leeson had discovered and demonstrated to some gentlemen connected with the hospital a spiral of the same character, that is to say, is wound around a primitive fasciculus. This seems, as far as I can judge from several examinations, to correspond in position to the delicate transparent sheath of the primitive fasciculus so beautifully demonstrated by Mr. Bowman, and called by him the sarcolemma. A few evenings since I was present when Dr. Leeson showed his spiral to Mr. Bowman and Mr. Busk, when the former gentleman, with perfect candour, admitted it was a structure he had never seen before. But you will observe, gentlemen, that this part of which I am now speaking does not touch the main question—the nature namely, of the ultimate fibre; for the spiral demonstrated by Dr. Leeson surrounds the primitive *fasciculus*. At the time mentioned, however, Dr. Leeson had satisfied himself that the ultimate fibre itself consists of a spiral.

It is proper to notice, that in the year 1838, Mr. Mandl must have seen something of the same kind; for he states, though this part of his account is incorrect, that the well-known transverse striæ seen on the muscular fasciculi are merely the coils of a band of cellular tissue, *spirally* disposed around the ultimate filaments.

I had intended to have pointed out some of the applications of the microscope in the investigations connected with physiology and geology; but I find that I have already so far exceeded the limits prescribed for this address, that I have only time to briefly call your attention to a subject immediately connected with our meeting this evening—namely, minute injection. Although some of the elder anatomists, and especially Ruysch and Lieberkuhn, greatly excelled in this beautiful art, which subsequently fell in some degree into disuse, it is proper on this occasion to state that several zealous cultivators of minute anatomy have lately succeeded in displaying, with a perfection which may vie with any preceding productions, the most delicate ramifications of the blood-vessels. Through the kindness of Mr. Dalrymple, Mr. Bowman, and Mr. Quekett, of the College of Surgeons, I have had frequent opportunities of inspecting the various organs thus prepared; and I think that those gentlemen who may this evening examine the vascular preparations made by Mr. J. Quekett, will coincide in the opinion that he has attained all that the art of injection, so far as displaying the disposition of the vessels is concerned, can effect. By the demonstration of the vessels thus afforded, it has been ascertained that they observe a special arrangement for each organ: thus

there is one character for the respiratory organ; a second for the mucous surface of the stomach; a third for the small intestine; and so forth.

The combined use of the microscope and minute injection is evidently introducing a new era into the history of anatomical preparations. The existing museums, although most valuable for illustrating the more demonstrative branches of anatomy, and the coarser changes induced by disease, are, in fact, insufficient either for the elucidation of the ultimate structure of the human body, or for the detection of the essential changes induced by morbid action. A well-assorted collection of injected organs, normal and diseased, and of sections and other specimens displaying the intimate structure, all of which might be contained in a small cabinet, together with a superior achromatic microscope, would do more to convey to the student a real knowledge of the human organization, than an imposing display of magnificent rooms filled with bottles, which in every sense may be said to be hermetically sealed.

In conclusion, I feel it due both to you and to myself to state, that when I undertook to present what I feel to be a most imperfect sketch of microscopic research, in its relation to anatomy, I was entirely in ignorance of the importance this meeting would assume, from the number and scientific distinction of those who have favoured the medical officers and teachers of this hospital with their presence this evening. I feel, gentlemen, that if I had knowingly undertaken this office before such auditors, I should have been guilty of great presumption; but such, I must repeat, was not the case; and I can only express my regret that I should have thus engaged your attention, when my place would have been so much more ably occupied by that distinguished physiologist to whose admirable researches I have had so many occasions to refer, and whom I am most proud to call my colleague.

MEMOIR ON
 ABRASION OF THE DIARTHRODIAL
 CARTILAGES BY FRICTION,
 AND ON THEIR
 ATROPHY FROM OTHER CAUSES.

BY ROBERT KNOX, M.D.

(For the London Medical Gazette.)

EVER since I first taught anatomy, nearly seventeen years ago, it has been with me a constant practice to direct the attention of my students to what-

ever structural changes were found in the practical rooms, and to all the deviations from the usual and natural arrangement of parts which from time to time occurred. Now of the structural changes which were observed, one in particular forced itself early upon my notice; this was "abrasion of the encrusting cartilages of the long bones, and more especially in the knee and elbow joints." A theory (as must ever be the case) soon presented itself to enable me to group the phenomena I then observed, and to predict the occurrence of similar changes provided similar causes were present; to be brief, I arrived, after a few years' observation, at the following conclusions, or abstract propositions:—

1st, That the encrusting cartilages of the long bones, and of others, may be, and are sometimes, destroyed by any contracted state of the joint, leading to an undue pressure on the articular surfaces at some points, and an absence, or at least a diminution, in other parts, of that friction necessary for the due maintenance of the healthy structure. And

2dly, Including in some measure the first proposition, that whatever alters materially and permanently, or at least for a considerable time, the system of leverage natural to any joint, must, in the end, *rub* away, or destroy, by *wasting* or want of use, the cartilages and synovial tissue of that joint, and even the surfaces of the bones themselves, unless the injury were arrested by a timely eburation of the bone; and that this effect might happen altogether independent of inflammation, ulceration, &c.

I am quite aware that in thus putting forward a theory in this prominent way, there is a danger of my readers arriving at a conclusion prejudicial not merely to it but to the whole of the facts hereafter to be stated. This, however, would be quite an unfair conclusion. During seventeen years, at least, the theory has been held by me loosely in the hand, and ever ready to be abandoned should any fact appear subversive of it; but no such fact, although searched for anxiously, having ever appeared, I cannot well be accused of haste in submitting to the profession the following series of observations.

Finally, I call it a series of observations, because they really are so; and

seeing that they have been chiefly made in presence of large classes, merit the attention of my professional brethren, altogether independent of the theoretical chain with which I have endeavoured to link them together.

As my observations, from their very nature, exclude all idea of method, I shall proceed at once to detail the organic changes observed in each of the joints in succession in which I may have observed them, commencing with the first joint of the great toe, or, as anatomists term it, the metatarso-phalangeal articulation.

The human foot, like every other part of the body, is liable not merely to great variety in form or shape, still confined within natural bounds and a strictly human form, but also to a number of deformities congenital and acquired. I shall speak first of the natural form of the foot, and of the proportionate and strictly beautiful foot, and of the probable sources of our ideas of the beautiful in respect to the human foot. The first remarkable circumstance in regard to the human foot, whether male or female, is that in childhood (I mean before the fourth year, or thereabout) the feet are almost universally well formed, and possess that form which, should it persist in the grown-up woman, all men at once declare to be beautiful. There are, of course, exceptions, but speaking of the young foot generally, whether male or female (fig. 1), I should feel

FIG. 1.



disposed to describe it as being seem-

ingly short, compared with the stature of the child; its inner margin straight, but more generally somewhat arched inwards; the great toe either placed on the same plane with the inner margin of the foot, or somewhat arched inwards, and slightly detached from the second, leaving an obvious space between them; the second toe longer than the first; all the surfaces smooth, and as if chiselled in marble; one gentle elevation, somewhat arched, carries the back of the foot from the toes to the instep; everything is taper, soft, gently traced; neither sinews, nor veins, nor bones, are visible; the whole, in fact, is eminently beautiful, and in keeping with all those pleasing and graceful forms which render the child an object of gentle attraction even to the sternest natures of mankind. After this period, sooner or later, the form and proportions of the feet begin to alter: in the boy they soon take on a masculine form and male proportions; the tendo-achillis becomes prominent and strongly defined. The foot acquires a length in the grown man equal to a sixth of the whole height of the individual; in the full-grown woman about a seventh and a quarter, or between that and a seventh and a half; that is, woman's foot is absolutely shorter, comparing height for height, than the male foot. So that if both individuals measure 66 inches in absolute height, then the male foot will, and ought to, measure eleven inches, or a sixth of the total height: I say ought, for if less, even by half an inch, an air of effeminacy and insecurity is given to the whole figure. On the other hand, the female foot of a person 66 inches in total height will be found generally to measure somewhat less than nine inches; and if more, it gives to the whole an unpleasing masculine character, a character of strength, solidity, and firmness, unsuited and unexpected in the female form. But the changes which the human foot undergoes are not confined to proportions merely; the more remarkable regard the extrinsic shape and character of the entire foot. The female foot, when perfect, retains, and ought to retain, much of the infantile or childish form; its straight inner line, and its freedom from angular proportions; but above

all, as I have already said, its infantile character, from which the male foot deviates so widely; and this it is which preserves for the finely-formed female foot, that of the Venus for example, the title of *beautiful*, to which the finest male foot has no pretensions whatever; it is the retaining of that infantile character, associated in our minds with youth and health, grace, simplicity, and truth, loveliness, and, confiding helplessness of the person. It is proper to observe here, that the foot of the very young child or infant differs from that of the child of three, four, or six years of age; it is not so pleasingly formed, retaining something of the fœtal form (which is never pleasing), an inner line too much curved, a large toe longer and stronger in proportion than what taste reckons comely, and too widely separated from the second; the foot, like all other parts of the

body, undergoing phases or changes from, and even before, birth until its maturity and ultimate decay. In a word, the fœtal forms are unpleasing; the infantile, on the contrary, beautiful.

If we turn now to contemplate the same instrument in the adult, whether male or female, whose proportions may not be so favoured, we frequently find that a congenital deformity, or at least a tendency to deformity, soon, at least in some, begins to show itself: the deformity to which I allude is that peculiar dislocation of the great toe, or change in its direction from a straight line with the inner plane of the foot (or even arched inwards) as it once was, to that of an angle, more or less acute, with the metatarsal bone supporting it, until at last it produces a plaiting, as it is called, of the toes, the large toe passing either under or over the second (figs. 2 and 3). This plaiting leaves ex-

FIG. 2.

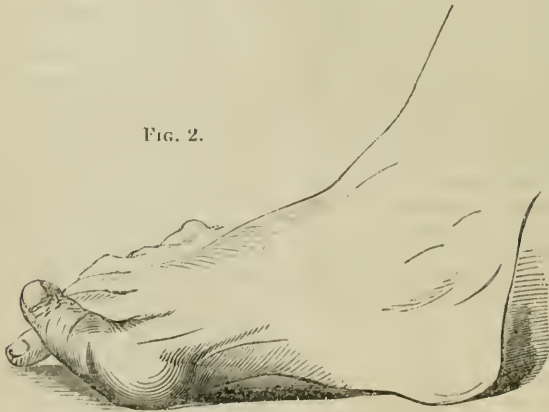


FIG. 3.



Front view of the deformed foot.

posed the distal, large, rounded end of the metatarsal bone, which some surgeons mistake for a tumor, and treat as such, calling it a bunion: the internal lateral ligaments give way; they spread out, in fact, become lacerated, and reduced slowly, but surely, to mere shreds; occasionally a small bursa or two forms just over these ligaments; at last, the integuments themselves ulcerate, and the bone appears, which the surgeon next attacks as an exostosis and morbid growth, the anatomist knowing all the time that the whole of this surgical view is a delusion, an inconceivable error; that the metatarsal bone is, in

fact, in its place, and that nothing whatever has happened excepting a slow but constantly-increasing change in the direction of the great toe, merely producing a plaiting of the toes, a stretching of the lateral ligaments, much uneasiness and positive pain; and, should the dislocation proceed so far as to expose the joint, much distress and real suffering. In respect to the internal condition of the joint, I may here briefly remark, that the cartilages of encrustation disappear from the surfaces of the bones, which become smooth and not unfrequently take on an ivory polish. Here, then, is one cause for the destruction of the cartilages of a joint, but seemingly not *abrasion*: these cartilages have disappeared not by too much friction exercised on a part, but rather by too little, a cause just as effectual in causing the absorption or disappearance of cartilage from the extremity of bones as the opposite: it may indeed be laid down as an axiom in regard to the diarthrodial cartilages, that they are affected, more or less, by every change of the joint, whether the change refer to an alteration of the mode of leverage, or to the mere exercise of the individual parts.

The dislocation outwards of the great toe I have just described, sometimes in one foot, sometimes in both, is one of the most common deformities met with in regard to the foot. I have never seen it in any savage race, but so far as I can judge (and in Scotland opportunities for observing the naked foot at all ages are by no means unfrequent) the deformity is quite common amongst all ranks and every age, with the exception of the very young. It seems to me to arise from a congenital predisposition; every thing I have seen, every thing I have observed, and all the dissections I have made, are, in my mind, subversive of the theory of Mr. Key, and others, who maintain that it may be traced to tight shoes, to too much standing erect, aided by age and corpulency; I repeat I have never met with a single observation confirmatory of such a theory. I have seen the deformity at ten, twelve, fifteen, in the mere stripling and girl who scarcely ever had a shoe on his or her foot; the extremely corpulent and active I have observed at the age of forty, fifty, and sixty, with feet nearly as well formed

as the Venus. I have heard of many other theories equally inadmissible with the one just mentioned in respect to the cause of this so frequent deformity, but one of the last, and certainly not the least ingenious, was one propounded to me by an old six feet high admiral; he had suffered much from this dislocation outwards of the great toe in both feet, which misfortune he was not disposed to ascribe to any original predisposition, but solely to his dancing master, and to the absurd practice of civilized well-bred nations walking with their toes turned outwards; pointing out to me, with much confidence in his theory, that the savage, who had no dancing master, never had this complaint, but had at all times a well-formed foot. How ingenious are the theories of the non-professional, but at the same time how totally destitute, like many of our medical ones, of even the slightest foundation in truth.

It has often occurred to me that this deformity of the foot is more common in the Saxon than in the Celtic race, and occurs oftenest in large, raw-boned, ill-proportioned, tall persons; nature seemingly leaving, in such persons, the extremities unfinished. I have already said that the disposition to it may, in some, be seen very early; at ten, twelve, or fifteen, increasing with years, never improving, and seemingly incurable. All contrivances I have as yet seen devised for restoring the great toe to its right direction have entirely failed. The tendon of the extensor longus, and its muscle, after a time, aid in increasing the evil, by drawing the toe still more forcibly outwards; so that, in addition to the wedge which some have proposed placing between the first and second toes, to counteract the tendency to displacement and consecutive partial dislocation (which are, in fact, the essence of the disease), this tendon would require to be divided. My bootmaker lately mentioned to me the idea of an ingenious gentleman who had, in returning overland from India, visited Egypt, and being much struck with the form of the foot of the Egyptian mummy, and particularly with the remarkable straightness of its inner line and great toe, in which no obliquity outwards could be discovered, adopted for the nonce the very pretty theory that all this was owing to the form of the Egyptian sandal; and that our crooked

feet, and plaited great toes especially, could be ascribed to nothing else but to the pointed narrow form of the European shoe! Of course it never had occurred to him that something might be due to the *race* of men to whom the feet belonged; that the Saxon and the Coptic races might, after all, not be identical; that, as they differed remarkably in physiognomy, colour, shape, intellectual and physical qualities, so they might also differ in respect to the form of the foot. These were points which perhaps had never occurred to him; so he ordered his bootmaker to make for him all boots and shoes on the model of the Egyptian sandal given him for that purpose, and taken originally from the foot of a primitive Copt. I sincerely trust that the experiment may succeed: in the meantime I must retain my doubts until he satisfies me of the identity of the races.

In thus opposing the theory of Mr. Key, in regard to the causes producing this deformity of the human foot, justice to myself compels me to state that, before doing so, I have endeavoured to obtain information in every way. Being aware that nearly all "the trade" (I mean of boot and shoe makers) entertained the same or similar views, I felt that there were two of the highest authorities opposed to me; the practical surgeon and skilful observer of great eminence, and the practical workman. But now that, in this half-shod kingdom, I have looked attentively at hundreds and hundreds of naked feet, in young and old, I feel confident in the correctness of my views. One of the very last observations, as showing the congenital nature of the deformity, or rather of the tendency which leads to it, occurred to me whilst waiting for the railway train at Cupar Angus. A girl, apparently about thirteen or fourteen years of age, stood by me: she was a light figure, by no means ill-proportioned, or in any way deformed; but on looking at the feet, which, as usual, were naked, I observed a remarkable plaiting of the great toe, with the usual bulging out of the distal end of metatarsal bone. The foot seemed a little shorter than the other, which was otherwise well enough made, but showed that deep hollow between the toe and heel so frequent in the large ill made feet of many adult males and females,

which, in her case, was more strongly marked than usual. But that which struck me most forcibly was that her mother, who stood close by her, had precisely the same deformity in the opposite foot.

Thus all I have seen during the last twenty years convinces me that the deformity in question is not caused, generally at least, by the use of tight shoes (theory of Mr. Key, and of all shoemakers), nor by the instructions of the dancing master directing us to turn our toes outwards in walking (theory of the Admiral I have referred to), nor by ill made shoes generally (theory of the gentleman who had visited Egypt); but arises mainly, if not solely, from a congenital tendency or disposition in the foot of some persons to assume this form; and that—

First, it occurs at nearly all ages after five or six.

Secondly, in males and females indiscriminately, whether heavy or light made, and whether they have worn shoes or not.

Thirdly, it may be confined to one foot, or found in both.

Fourthly, it leads to an atrophy or disappearance of the cartilages of encrustation and of the synovial membrane; and as this cannot be caused by pressure, nor inflammation, nor apparently by ulceration, it must originate in the altered form of the joint, and the non-use of the cartilages themselves.

Before returning from this digression on the form of the human foot, I shall take the liberty of adding a few remarks in respect to a point or two which, to me, seem not well understood. It is well known that a short shoe or boot, although always unpleasant, may be put up with so long as the person remains seated or laying down; but let him walk about, and then the distress becomes insupportable with a rapidity dependent on the shortness of the "chaussure." Now how is this? Anatomy explains it perfectly. The arch of the foot is not a solid osseous arch, unyielding and inelastic; but, on the contrary, possesses within itself the power of elongating itself (when the weight of the body is put on the arch) by means of the calceo-scapoid ligament. The elongation may amount to nearly half an inch. The elongation is due to the elasticity of this ligament. Now if

the shoe merely fit the foot *at rest*, it cannot fit the foot *in action*; for under the weight of the body, the arch, by means of the ligament, will lengthen about half an inch: this it is which so speedily renders the short shoe insupportable. Much, no doubt, might be done by ingenious mechanics, well acquainted with the anatomy of the foot, to remedy many of the evils attending the ill-formed foot.

I now return to the subject of the loss of the diarthrodial cartilages by abrasion or otherwise. We have seen, as regards the joint of the great toe, that the disappearance of the cartilage from off the ball and socket-joint of the great toe, in the peculiar deformity just described, could not be owing to abrasion, but rather to a change in the disposition and arrangement of the articular surfaces. By the gradual slipping of the first joint or phalanx from off the rounded end of the metatarsal bone, the cartilages of encrustation are no longer opposed to each other; their functions in a great measure cease; and being, as it were, no longer wanted, they gradually break up and disappear. I am quite aware that most British surgeons will give to the process by which this is effected the name of ulceration—ulceration without suppuration; just as we sometimes have supuration without ulceration. Destruction by abrasion, pressure, "*usure*," &c. it certainly is not: may it not merely be the atrophy which attacks most organs when their functions cease? As happens to the acetabulum itself, and its powerful encrusting cartilage, when the head of the femur, being thrown from its socket, is left unreduced, the osseous cavity, which originally contained it, its cartilage of encrustation, synovial membrane, and cotyloid ligament, all disappear.

Other joints of the foot.—It frequently happens that, on opening the joint between the scaphoid and astragalus, and that between the scaphoid and inner cuneiform bone, the cartilaginous surfaces are found abraded, and the osseous tissue rough, bare, or polished. This occurs, no doubt, mostly in elderly people; and may arise, first, either from atrophy, using the term as applied to the particular disorganization and pathological condition whose precise nature has not yet been fully made

out; or, secondly, from rheumatism; or, thirdly, from want of use. But it is not my intention to say more of these joints at present, since I have unfortunately not examined them so often with the attention required in scientific inquiry.

The *ankle-joint* has appeared to me of all others least liable to the loss of the articular cartilages from the causes I now investigate. On this point I have no experience.

The knee-joint.—During the first and second sessions of my teaching anatomy, opportunities occurred of examining, with all care, in the Practical Rooms, a few contracted knee-joints. These were more or less contracted; some quite stiff; and others might be farther flexed, but not extended. On opening these joints, it surprised me to find the uniformity with which, at certain points of the femur, patella, and tibia, the cartilages had been destroyed, and, as it were, broken up; in some parts rough, and as if unravelled; in others, traversed by lines breaking them up into small fragments; occasionally the bone laid quite bare, and even deeper indented or worn into, and even scooped out, or polished like ivory, and this eburnation extending to a greater or less depth into the texture of the bone. In the meantime there was no appearance any where of actual disease; of inflammation, or its effects; of ulceration, or of purulent fluids. Whatever had destroyed these cartilages, and altered the condition of the surrounding osseous tissues and the form of the joint, it seemed clear to me that it could not have been actual active disease of any kind; and I came to the conclusion, though very slowly and reluctantly, that, in most, if not in all such cases, the cartilages had been worn off or abraded by undue friction applied to certain portions of their surface, and atrophied, in others, from a want of the healthy and free use of the joint; and that both might be traced to an alteration in the form of the joint caused by contraction or stiffening, no matter how produced; and that, whatever share rheumatism or other complaints might have in inducing a pathological condition of the encrusting cartilages of moveable joints, leading to their ultimate destruction and disappearance, it was not necessary,

at least in certain cases, and in those I now speak of (a numerous list), to resort to any such explanation in accounting for the phenomena. Friction in excess or in defect, over use or under use, or, to express it more generally and more comprehensively, but not less truly I hope, whatever alters the system of leverage connected with a joint, will, as a mechanical result, give rise to abrasion and atrophy of the cartilages and of the bones themselves, altering the form of the latter, causing exostotic depositions of a very peculiar character and singular history, and, in short, producing phenomena of an altogether unexpected nature, but strictly independent of the processes usually called inflammation, ulceration, &c.

[To be continued.]

HINTS ON THE ACTION OF BISULPHURET OF CARBON, &c.

To the Editor of the Medical Gazette.

SIR,

IN October 1841, I gave an account, in your valuable journal, of the action of the vapour of hydrocyanic acid upon diseases of the eye. Since that period I have been engaged in investigating the action of various other bodies on the same organ, and under the same form.

One reason why I did not feel satisfied with the effects produced by the hydrocyanic acid, was, that its action, like that of all other medicines, decreased in power by continued application; thereby rendering it necessary to have occasional recourse to other medicines in order to insure a more speedy recovery. Another reason was, the reluctance of many individuals to submit the eye to the action of so potent an agent. The first medicines to which I shall refer, and which I have employed with some success, are the chlorocyanic acid and sulphuretted hyazic acid.

The plan I pursue is that of putting a drachm of one of the medicines into a bottle (containing a small piece of sponge) of about two ounce size, having a mouth precisely fitted to the eye, and with a ground glass stopper.

The action of these medicines is very different from that of the hydrocyanic

acid, in as far as they both stimulate the eye, and produce much greater warmth and irritation, with less dilatation of the pupil. Few, however, can bear the chlorocyanic acid to be applied longer to the eye than half a minute; though in a minute after its application all irritation is removed, and the eye feels perfectly at ease.

The next medicine which I have employed in the form of vapour was the chloruret of iodine. This medicine produces very little warmth or uneasiness to the eye if continued for the space of two minutes or upwards; but a sensation of irritation, accompanied with a flow of tears, takes place on its removal. It contracts the pupil; and in no case have I seen it dilate it. Its vapour rises very readily, and does not leave the yellow disagreeable colouring on the skin produced by the vapour of iodine when uncombined, which is a great drawback in the use of iodine in diseases of the eye.

The last medicine which I have employed is the bisulphuret of carbon, which is so volatile that the application of it to the eye, when the bottle is held in a warm hand, for a few seconds, is as much as can be borne, in consequence of the intense pricking heat and flow of tears which it occasions. Owing to this fact, I generally use it by causing the patient to shut the eyelid during its application, which can then be continued for a minute or two, with the same beneficial effect upon the eye, without inconvenience to the patient. It generally contracts the pupil, and very seldom dilates it. I used to employ iodine by putting it into the same bottles and immersing it in warm water, and in its state of vapour applying it to the eye, but I find it answers much better when dissolved in the bisulphuret of carbon.

It is my intention shortly to give a full account of the action of these medicines upon the various forms of disease to which the eye is subject, and also what particular disease each medicine is best calculated to remove. At the same time I will state such instances of failure as have occurred in my experience, in order that a just estimate may be formed of the value and importance of each medicine.

It may not be out of place here to state that I have employed with great

success the bisulphuret of carbon to enlarged indurated lymphatic glands. In the first instance I rubbed equal quantities of the bisulphuret of carbon and alcohol upon the parts affected, but without any effect upon the glands. But as its effects were so great when its vapour was confined to the eye, I was led to apply it in the form of vapour, and by means of glass bottles similar to those I have described. By these means I excluded the action of the medicine from the external air, and thereby prevented its speedy evaporation. When it had been applied about one minute the patient felt the part very cold, but immediately after, a gradual heat, accompanied with great prickling; the heat increasing the longer the medicine was kept in contact with the part, until it could no longer be endured. On removing the glass the part was red to an extent two or three times greater than the part enclosed. In a few days the change in the size of the glands was very great, and by its daily repetition a complete and speedy removal of the disease was effected.

I also find that its action upon diseased glands is more decided if the surface of the skin is well moistened with water previous to the application of the bottle to the part. The water, in fact, not only prevents the escape of the vapour between the glass and the skin, but assists the imbibition of the carbon—a point of the highest importance, in as much as all its action on the part depends upon the exclusion of the atmospheric air from the vapour. I may here observe that these applications occasion no injury whatever to the skin.

I have also found the bisulphuret of carbon, and the chlorocyanic acid, valuable medicines in the removal of deafness dependent upon a want of nervous energy and deficiency of wax. The mode of its application is substantially the same as that which I employ in diseases of the eye, with this difference only, that the bottle is formed with a small neck and stopper adapted to the size of the orifice of the ear, and held close to the organ until a considerable degree of warmth is produced.

The action of those medicines which contain so large a share of carbon arises from the carbon in the vapour fermenting the cuticle and coming in contact with the oxygen in the vessels,

which is conveyed through every part of the frame by inspiration and otherwise, and thereby forming carbonic acid gas, which evolves heat in the ratio of the quantity consumed by the oxygen.

The following quotations from the celebrated Liebig, in his work on Organic Chemistry, sufficiently prove the correctness of this opinion:—

“It is only in those parts of the body to which arterial blood, and with it the oxygen absorbed in respiration, is conveyed, that heat is produced. Hair, wool, or feathers, do not possess an elevated temperature.”

“This high temperature of the animal body, or, as it may be called, disengagement of heat, is uniformly, and under all circumstances, the result of the combination of a combustible substance with oxygen.”

“In whatever way carbon may combine with oxygen, the act of combination cannot take place without the disengagement of heat.”

“We can no longer doubt that gases of every kind, whether soluble or insoluble in water, possess the property of permeating animal tissues, as water penetrates unsized paper.”

Does not the action of medicines containing so large a proportion of carbon, which can be brought into contact with the whole external surface of the body, and thereby capable of being easily disengaged, suggest a method of relieving pulmonary disease likely to be attended with no ordinary success, by calling into greater activity the action of the skin, and thereby materially lightening the labour of the lungs? Are we not the more encouraged to expect such remedial influence in diseases of the lungs, from the fact of its great power in removing indurated glands, which are so common accompaniments of consumption? There can be no doubt of the usefulness of bisulphuret of carbon in skin diseases.

I have submitted these observations under the conviction that they embody principles which may be carried out, and made of great utility to mankind.

I am, sir,

Your obedient servant,

A. TURNBULL, M.D.

48, Russell Square, Oct. 20, 1842.

MR. ADDISON'S REMARKS ON
MR. T. WHARTON JONES'S OBSER-
VATIONS ON THE BLOOD.

To the Editor of the Medical Gazette.

SIR,

MR. T. WHARTON JONES has a happy method of stringing together his '*Observations**', so that while he renders it difficult for his readers to discover the sources of his facts, he is apt enough in appending the names of individuals to what he calls *inaccurate interpretations*. For instance, he says:—The colourless corpuscles contained in the liquor sanguinis which has risen to the top in inflammatory blood, have been supposed to form by their coalescence the buffy coat. This inaccurate interpretation of the matter, first given by Mr. Addison, has been assented to by Dr. Barry.†

Dr. Barry I have no doubt will give the observations all the attention they merit at his hands, and for myself I beg to refer the author for my "interpretation of the matter" to the MEDICAL GAZETTE, (15th of April, 1842,) published very nearly six months before the appearance of Mr. Jones's observations.

"After removing a thin pellicle of fibrine from the surface (of the liquor sanguinis of buffy blood) with a needle, I gently touched with the point of a finger the fluid beneath, and placed a colourless drop between two slips of glass. On submitting it to the microscope I found a great number of colourless corpuscles, some of them containing in their interior several exceedingly minute molecules and granules; others, one, two, or three larger molecules or granules. There were also floating in the fluid great numbers of loose or independent molecules, varying in size, the largest being at least eight or ten times smaller than any of the colourless corpuscles. These minute molecules or granules had the appearance of dark specks, or bright ones with a dark circle, according to their approximation to the focus of the microscope. The coagulation of the fibrine had not at this time commenced in the drop of liquor sanguinis under examination; very soon, however,

the fibrinous filaments made their appearance; which, gradually increasing in number, crossed and intersected each other at various points; the molecules, at the same time congregated together in various irregular groups; the number and intricate interlacements of the fibrinous filaments inclosing and drawing together the molecules and colourless corpuscles*.

But even in the papers particularly referred to by the author of the Observations, to make out his charge of inaccuracy, I have observed, when describing the coagulation of the liquor sanguinis of buffy blood, "As the liquor sanguinis accumulates, it grows more opaque, the colourless globules become more numerous: a film forms, and at length perfect coagulation takes place *by the thickening of the film and the firm aggregation of the globules*†."

In conclusion, I think the author of the Observations would have done well to have stated where he obtained the first idea of examining the liquor sanguinis at the surface of buffy blood before it coagulates, and of the quantity of colourless blood corpuscles which it contains—whether from his reading, or his own independent researches. It would also have been more satisfactory had he substantiated his remark, that "the existence of colourless corpuscles in the buffy coat of the blood is no new observation," by stating where he had found any description of them, in which their existence, if noticed at all, was not distinctly referred either to the process of coagulation or to some analogous formation subsequent to the withdrawal of the blood from the body.

I remain, sir,

Your obedient servant,

WILLIAM ADDISON.

Great Malvern, Oct. 27, 1842.

P.S. The forthcoming volume of the *Transactions of the Provincial Medical and Surgical Association* will not be published for some time: I shall therefore feel obliged by your inserting the following brief results of my researches on the formation of tubercles in the lungs.

The blood, at all times, contains two

* British and Foreign Medical Review, Oct. 1st, 1842, pp. 583, 600.

† P. 590, loc. supra.

* MEDICAL GAZETTE, April 15, 1842, p. 144. Mr. Jones surely does not mean to deny that the colourless corpuscles have a considerable influence in the formation of the buffy coat.

† MED. GAZ. 1840-41, vol. i., p. 690.

distinct kinds of corpuscles—the one red, the other colourless. The colourless corpuscles are highly organized vesicles or cells formed from the central portion of the red corpuscles. They combine with, or adhere to, the tissues through which the minute currents of the blood circulate, and become cells, performing different functions, and assuming different forms, in various parts of the body, in accordance with the primitive law regulating the development of the organism. Thus all kinds of epithelial cells are formed of colourless blood corpuscles, and each cell performs its own function quite independent of those by which it is surrounded.

Pus corpuscles are partially formed cells; they may be seen in all stages of development, from colourless blood corpuscles in the serum of a blister, to large granulated vesicles and well-formed epithelial cells in various cutaneous diseases.

The colourless blood corpuscles have an equally important share in forming "the results of inflammation," as they have in administering to nutrition.

When, solely in consequence of their excess, their normal development ceases, they become pus corpuscles; but when they exercise an independent activity they give rise to specific forms of disease.

All the objects composing a tubercle of the lungs originate from colourless blood corpuscles. A tubercular disease of the lung is in all respects analogous to a chronic eruption of the skin (*lepra*, *psoriasis*, and *acne*); the varieties and complications of the one are neither greater nor more numerous than those of the other.

The colourless blood and pus corpuscle of man; the inner vesicle of the red corpuscle, and the colourless corpuscle or lymph globule of the batrachia; the polygastric animalcules; the pollen grain of phrenogamous plants; and the spore of epiphyllous fungi, are all analogous in their structure to each other; they are granulated cells, which may be completely dissected by Liquor Potassæ, and precisely similar objects, in great numbers, may be turned out of them all.

TWO CASES

OF "FITS:" WITH REMARKS.

By C. J. B. ALDIS, M.D.

(For the Medical Gazette.)

CASE I.—I was requested to visit Martha B., æt. 16, Sept. 29th last, residing in Hunt-street, by her mother, who stated that her daughter was in a fit, and had been so since two o'clock in the morning, and that she had suffered from a fit some time before, for which she was bled. I went immediately from the Dispensary, between twelve and one o'clock, and found the girl in bed, apparently insensible, and closely watched by her grandmother, who said that the patient had not spoken since two o'clock, although they tried to make her sensible in every way they could think of. Pulse natural; skin warm; bowels said to be costive; catamenia regular. I called loudly to her, but received no reply; she seemed to be in a complete state of stupor. On trying to raise the eyelids, in order to examine the condition of the pupils, I found that she endeavoured to close them again. Suspecting the case to be hysterical, I told the mother to bring me a jug of cold water, and threatened to throw it over her if she did not return an answer to my questions. She had previously experienced a sensation of choking in the throat at different times. When the water was brought to me I renewed the threat, and observed the eyelids begin to move. I was about to pour the water over her head, when she sat up in the bed, without opening her eyes, or returning an answer to my questions. On repeating the threat she opened her eyes, and began to speak, to the astonishment of her anxious and wearied relatives. Aperients and antispasmodics, with cold affusion every morning, were ordered. I told her to visit me at the Dispensary on the following Monday, which she did, and is now quite recovered.

CASE II.—The following is a case of a more serious nature, which occurred Oct. 24th instant. The mother of the girl applied to me at the Dispensary to visit Sarah P. æt. 12½, residing in the Horse Ride, who, she said, had not

spoken since nine o'clock the same morning. I went immediately, between twelve and one o'clock, and found the patient in bed, in a fit. Pulse oppressed; skin cool; bowels open; urine free; head warm, lips livid, foaming at the mouth, stertorous breathing. The pupils were contracted at first, but afterwards became dilated; feet cold; arms contracted across the chest; mouth firmly closed, from rigid contraction of the muscles. Previously to her being attacked at 9 o'clock, she asked her mother for some meat, which was refused; soon after, her mother observed "a working of the fingers," and coma supervened. She had pursued her occupation of fancy trimming until Saturday evening; felt poorly on Sunday, and went to bed. Nine years previously she was attacked by measles, since which time she has been subject to occasional attacks of "asthma," according to the statement of her mother. Never had a fit before. Mustard poultices were applied to the feet, cold water to head, and blood was taken by Mr. Gayton, the apothecary to the Dispensary.

After the abstraction of blood, the muscles of the mouth relaxed sufficiently to allow me to administer an active purgative, a portion of which returned through the nostrils, and the mouth became firmly fixed. Various means were resorted to with a view to restore her, but she died in four hours afterwards.

The permission of her parents having been obtained, her body was examined the next day.

The mouth was firmly closed, and the abdominal muscles were very hard and rigid.

Head.—On opening the longitudinal sinus, much dark fluid blood escaped. On removing the dura mater, the surface of the brain was observed to be congested to the last degree. The ventricles contained no effusion whatever, and there was no trace of ruptured blood-vessels in its substance, which, however, was greatly congested.

Chest and abdomen.—Old adhesions were detected between the pleura pulmonalis and pleura costalis of the right side of the chest; the lung of the same side containing more blood than natural. The heart, left lung, and abdominal viscera, were all healthy. The alimen-

tary canal contained a small quantity of feculent matter.

REMARKS.—The foregoing cases present a remarkable contrast; the first being a case of hysteria simulating apoplexy, the second presenting an example of apoplexy from cerebral congestion, which, most probably, was connected with the morbid changes in the lungs, affording an impediment to free circulation of the blood through them. She had been affected with headache at different periods for a long time. The case of hysteria affords an example of the necessity of not having recourse to blood-letting in every case of "fits," although the popular opinion may be in favour of it. The mother of the girl in this case was dissatisfied at first that I did not bleed her daughter, but when she found that the patient was able to walk to the Dispensary on my next visit, as I said she would be able to do, her anxiety in regard to bleeding ceased.

CASE OF ASCITES.

To the Editor of the Medical Gazette.

SIR,

THE following case of "ascites" presents several points of interest, which, I think, may entitle it to a place in your valuable periodical. In the first place, it would seem to have arisen suddenly, after a severe attack of hepatitis attended with peritonitis, and, from the patient's own account, her body became very large in the course of a few hours. This appears to have taken place on the remission of the pain she had previously laboured under.

Secondly, the large quantity of purgative, diuretic, and diaphoretic remedies employed, produced no diminution in the size of the abdomen: and although the bowels were freely relieved every day, still the secretions were of an unhealthy and highly offensive character.

Thirdly, this appeared a case where the operation of acupuncture might be tried with a fair chance of success, there being no apparent sign of organic disease. The great pain which was produced after each operation, with no visible diminution of the patient's size, induced me to persist no further in the

attempt to produce absorption by this means. It must be borne in mind, that this failed at a time when all the secretions were advancing towards a healthy state, and the secreting organs in a state of activity from the remedies then employed.

Fourthly, the perfect success which followed the operation of "paracentesis" after so large a quantity of fluid had been voided, and which must be attributed to the rational treatment she had persisted in some time before, and persevered in for some time after, the operation.

Nothing is of so much importance, in every surgical operation, as that of preparing the system of the patient for the shock, and to produce such a change as to prevent the recurrence of the morbid action which previously existed in the body. Indeed, this is not a solitary case in which the utmost success has crowned the efforts of my treatment in cases of malignant disease, which were considered hopeless, and probably would have proved so, but for the rational treatment of improving all the functions of the body, and removing, as far as possible, the remote causes of the disease. At a future period I may communicate some cases which will show the importance of this proposition.—I am, sir,

Yours respectfully,

WILLIAM ROBBS,
M.R.C.S.L.

Grantham, Oct. 30th, 1842.

A. J., ætat. 24, was taken ill, about nineteen months back, with palpitation of the heart, urgent pain of the right side attended with sickness, and large quantities of bilious matter were voided. This occurred while she lived in service, which she did in the capacity of a cook. The pain in the side continued about two months, with occasional swelling and œdema of the feet and ankles. On the disappearance of the pain in the side, the abdomen began to enlarge, which was attended with severe pain in its lower part. This continued for some little time, when, on the abatement of the pain, the belly rapidly increased to its present magnitude. She was under medical treatment; the abdomen was blistered, and she took medicines. The patient is of short stature, spare habit, and, when well, very active. At this time (July 15th, 1842) the countenance

presents a healthy appearance, is clear and natural. The bowels are regular; the urine is scanty, but voided without pain; the pulse beats 80 in the minute; the tongue is rather white, but quite moist. The appetite is good, and there exists no inordinate thirst. No inconvenience is experienced in the horizontal position. The systole and diastole of the heart natural, but feeble. The abdomen is of large size, the swelling uniform, the fluid apparently occupying the whole cavity of the peritoneum. Fluctuation is very distinct over every part. On a careful examination no organ presents any enlargement. The circumference of the abdomen measures thirty-six inches over the umbilicus.

℞ Pulv. Digit. gr. iss.; Hydr. Chloridi, gr. j.; Camphor, gr. iij.; Extr. Hyoscyami, gr. v. Misce, fiatque pilulæ, ij. 6ta quaque hora, sumendæ.

℞ Extr. Elaterii, gr. i.; Magnesiæ Sulph. fʒij.; Tinct. Sennæ. Syr. Simp. aa fʒj; Spt. Æth. Nitr. ℥xl. Misce fiatque haustus omni mane sumendus.

18th.—The elaterium made her very sick, but it purged the bowels freely: the motions were large in quantity, dark coloured, and very unnatural in smell. A very small quantity of high-coloured urine has been voided, which, on standing, deposits a large quantity of pink sediment. It is not coagulable on the application of heat. It is of acid quality, changing the litmus paper red. In other respects the same.—Pergat.

24th.—The elaterium produces such severe sickness and syncope, that she refuses to persevere with it. The circumference of the abdomen, for the first few days, appeared to diminish; but at this time it measures the same.

Repetantur pilulæ ut antea.

℞ Pulv. Potassæ Bitart. ʒij.; Pulv. Jalapæ, ʒj. Misce fiatque pulvis 4ta quaque hora sumendus.

August 7th.—The circumference of the abdomen very little less. The urine is nearly clear, and large in quantity. The bowels are freely acted on, but the motions continue to have a dark unhealthy appearance.

I determined this morning, as the secretions were approaching to a healthy state, to try the effects of acupuncture: I consequently made four punctures into the cavity of

the abdomen, with the needles, two about four inches and a half from the umbilicus, in a line with the superior spinous process of the ilia, and one an inch above, and the other an inch below, the umbilicus in the linea alba. A small quantity of dark yellow serum escaped after each puncture.—Pergat.

11th.—She complained of pain over the whole surface of the abdomen after the operation, which lasted for three days. The bowels continue freely acted on, and the motions are large in quantity and of a dark clay colour; the urine is clear, and natural in quantity. Her size and appearance much the same.

Repetantur acupuncturationes duodecim abdomini.

R Gum. Cambogiæ, P. Scillæ, aa gr. ij.; Hydr. Chloridi, Pulv. Digitalis, aa gr. iss.; Extr. Conii, gr. iij. Misce fiantque pilulæ duæ alterna quaque nocte sumendæ.

R Potassæ Nitratis et Bitartratis, Pulv. Gum. Acaciæ, aa ʒij.; Sacchari Albi. ʒiij. Misce accuratè divideque in chartas xij. quaram sumat unam tertia quaque hora.

15th.—She experienced much pain and uneasiness from the last operation, which has scarcely ceased. This has not been attended with any diminution in her size. The secretions have improved, and fresh bile may be observed mixed with the feculent matter. I am of opinion it is advisable to persist with the remedies till the secretions become quite in a healthy state, and then to resort to the operation of paracentesis abdominis.—Pergat.

22d.—The patient is in good spirits, and her countenance looks healthy. All the secretions have assumed a natural character; tongue clean and moist; pulse 76. I now performed the operation of tapping in the usual way, when twenty-one pints of dark yellow serum were drawn off. She bore the operation well, and nothing remarkable occurred.

Continuantur remedia.

23d.—No unfavourable symptoms have taken place; the tongue continues clean; the pulse regular, about 80 in the minute. Three pints of urine have been voided within the last twenty-four hours. The bowels have been freely acted on, but the motions

are of a darker colour, and larger in quantity. On pressure over the right hypochondriac and hypogastric regions, pain is experienced, but not of a violent character. I cannot discover the liver or any other organ enlarged.

From this time she continued her remedies, at intervals, for six weeks, when she was discharged, quite well in health, with not the least appearance of any return of the disease.

MEDICAL GAZETTE.

Friday, November 4, 1842.

“Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso.”

CICERO.

MEDICAL EMIGRATION.

No man, it has been said, lives by the treatment of fevers and inflammations, or of dislocations and fractures alone. This is nearly, if not quite true: in a highly civilized community medical men seldom make fortunes by the treatment of acute diseases exclusively—perhaps in a civilized metropolis, never.

In proportion as medical education is abundant, medical skill is expected; and although the want of it is resented and punished as a misdemeanor, the possession of it is comparatively but lightly regarded. Would a man make a fortune by practising what every candidate for examination is expected to know, he must either travel into countries where such science is rare, or must persuade the public at home that he has far more of such knowledge, or a better way of applying it, than his fellows.

In this country medical science has long been diligently cultivated, and our art has been applied on recognised principles to the production of valuable results; but a long peace, a measure of free trade, and other blessings, have produced much abundance,—and much discontent. There is grumbling in physic as in farming. Patients and the

people cry out for cheap physic and cheap bread, while the doctor exclaims with the farmer, that his skill and exertion do not enable him to pay his rent, or to live as he ought; still less to enjoy the dignity of an income tax. The acquirement of wealth and honour, then, should not be the main inducements to enter our profession: assuredly they are not the general results. An increased and increasing recognition of the principles of frugality, in a luxurious age, and the rejection of the doctrine that capital is well laid out in dashing equipages and shewy houses, prove that in these days an honourable competence is all that can reasonably be looked for.

Large capitalists and skilful cultivators, many or few, are but exceptions to this rule; and although to hold up the improved rents of the Sutherland estate, or the well-earned preserves of an esteemed Norfolk baronet, may be very proper at agricultural meetings, medical dinners, and introductory lectures, yet these are not exactly average specimens of the probable results of good farming or skilful obstetrics.

But a competence; the

“clear,

For life, (blank) hundred pounds a year;”

what is to be done for a competence—in these over-tilled fields—in this overstocked profession? One of three things—perhaps more, that we wot not of,—but these three *are* done. Some emigrate; some—in all variety of type, from large posters to small pica—assure the public that not to consult them is suicide; and the rest sit cheerfully down to do their duty honestly, ever increasing their knowledge, and making the best of their opportunities to get forward.

To the second class of aspirants we have nothing to say at present. A jocose weekly contemporary describes their habits so well, and, in his letters to his son, gives so much sound counsel suited

to their views and feelings, that we may safely leave them to the gentle guidance of his *lignum vitæ ferula*, and the ample introduction which his pages can give them to that public with whom he is so deservedly a favourite.

Some, we have said, emigrate. But here the farmer and the doctor, partners in discontent, must separate, and go different ways. Righteous men, who cannot live together, and will not quarrel, have always done so. The farmer goes generally where there is much land and few men, the doctor where there are many men and few physicians. The disastrous effects that have followed the neglect of this rule prove that it is a law of nature. Medical men have gone to Canada, Australia, and similar places, where people have not time to be ill; if ill, have not time to send for the doctor; and if stricken down by wounds or deadly sickness, have no fee, or at least no *portable* fee, to offer him:—a hay-stack, a standing crop, an eligible site with water privilege, or a small flock of sheep, might be his honorarium, after a journey compared with which the longest ride in the largest union would be but a breathing canter for a spare horse. When the settler makes war with the forest, medicine may be his occasional and most useful ally, but not his well-paid mercenary.

But an old doublet makes a new jerkin, and he who has failed at home to keep a practice, may become a good keeper of sheep. It will be found that all who have got rich in Australia and other thinly peopled countries, and nearly all who have succeeded, have either relinquished the practice of physic, or have joined to it more lucrative pursuits.

That emigration may produce its best effects, not only should the best places be selected, but the fittest persons to resort to them. And for guidance in

this matter we may again observe certain differences which appear on comparing what occurs in highly civilized communities, where the division of labour is carried to the utmost extent, with what occurs in a more simple state of society.

In the metropolis a man in large practice has little opportunity for political or even municipal avocations; and what leisure he may have, it is rather his interest to conceal than to display. He therefore passes that leisure in the pursuit of collateral sciences, or in the privacy of his own house; or if he goes much into society, it is into that of his medical brethren. Now though this tends to make, and does succeed in making, professional society *very professional*, yet it has the good effect of favouring a high cultivation of the art; for although men whose minds are of a low order are content to talk for a whole evening about the comparative value of their neighbour practices, or the probable successor to the next hospital vacancy, yet those of a higher stamp can hardly meet without gaining and giving information of a scientific kind.

The chief advantage from the frequent meeting of medical men amongst themselves, is the affording a legitimate time and place for professional conversation; and it will be found, by the way, that those who habitually absent themselves, or are excluded from such meetings, are the most apt to acquire a habit of talking professionally—of lecturing, in fact, in mixed society. This offence against good taste arises either from vanity or quackery. There is vanity in talking of what we know better than our hearers, and there is quackery in parading our knowledge before those who may become customers for the article exhibited. Among professional equals, rivals, and superiors, the temptations to

both these frailties are lessened, and the offence itself is less tolerated.

It is a symptom of a profession being too full for the actual work it has to do, when its members, instead of seeking exemption from public duties, are frequent candidates for public offices. It may fairly be questioned whether many of our brethren do not consider their exclusion from serving as grand jurymen rather as a hardship than a privilege, yet the terms of exemption evidently prove it to have been formerly considered a burden. In the Papal States, all the high government offices, and most others, are filled by ecclesiastics. In Great Britain, the majority are occupied by lawyers. Now the church at Rome, and the bar in England, are the professions which have the greatest number of unemployed members; and whatever national or political reasons there may be for choosing from these classes, it is quite clear that the principal cause which leads any class of men to avoid seeking public appointments is their finding full employment and sufficient remuneration in their own special calling.

Another cause for medical men not rising often to political eminence, is what may be termed professional specific gravity. The pressure of one kind of intellectual exertion condenses, as it were, the faculties, gives concentration to the thoughts, and weight to the character. This last cause operates not only on classes, but even more strongly on individuals. On the other hand, the intelligent doctor, “*qui se connaît en tout, même un peu en médecine*,” will be excelled in solidity, but will greatly excel in buoyancy.

Now in a new country, and one thinly peopled, where it is not pretended that the minds of professional men are directed exclusively to their art, leisure and intelligence often lead

medical men to seek for, and to fill with dignity, the highest places in the social system. Many of the first men in the United States of America have studied and practised medicine.

It follows, then, that the man of general intelligence is the best for a new country, as being most able to adapt himself to new circumstances, and most likely to appropriate and to sustain a prominent part in the social drama in which he is acting.

Those of more exclusively scientific acquirements must, if they remain at home, bide their time, and take the chance of their labours being appreciated. To those who cannot afford to wait, probably the best prospects for medical emigrants are offered in the populous but ignorant countries of the East. The proverb, 'Parmi les aveugles un borgne est roi,' expresses a fact which we should hope would tempt few of our readers; but there are great things to be seen, to be learnt, and to be done, on the South and East of the Mediterranean—as we hope to show on a future occasion.

COLLEGE OF SURGEONS.

AN announcement appeared in one of our contemporaries last week, and has since been copied into several of the daily papers, to the effect that the Council of the College of Surgeons had come to the resolution of admitting to examination all who presented themselves before January, even although they might not have complied with the regulations of the College as to their professional education. This is a mistake; no new regulations have either been made, or are contemplated. But, as heretofore, all are admitted to examination who have complied with the regulations which were in force at the time they pursued their professional education. If, for example, any

one applying for his diploma could show that he completed his studies five years ago, but had been prevented by accidental circumstances from coming to the College sooner, he would only be required to have complied with the regulations which then existed, and not with those which have since been made.

SALE OF POISONS.

MOST of our readers are aware that the sale of poisons upon the continent is limited by severe laws, the infraction of which is visited by heavy penalties. The punishment does not hang over the head of the offenders, like the sword of Damocles, terrific but inactive; for the law is neither obsolete nor obsolescent. Let us cite a few instances of its activity in France. A woman, wishing to commit suicide, bought an acid preparation of Prussian blue. She swallowed it, but her life was saved by judicious treatment. Still, the grocer who sold it to her was fined 3000 francs (£120.) for vending it without observing the forms decreed by the law of the 21 Germinal of the year XI. (*Journal de Chimie Médicale*, March 1842.)

In the same number of the same journal we find an account of another grocer condemned to an equal penalty. He had sold *eau seconde* by mistake instead of vinegar; and a lady having eaten some salad made with it was attacked with general weakness and indisposition, which had not gone off when the trial took place.

It seems that two different preparations are known by the name of *eau seconde*; the one being a solution of potash, the other a mixture of equal parts of commercial nitric acid and water. In the opinion of the editor of the *Journal de Chimie Médicale* neither of these preparations could have been used in this instance, as either one would have given the salad so marked a flavour that it would have been uneatable; while it was deposed that the salad in question was flat and tasteless.

In a third instance, a *pharmacien* was fined 3000 francs for having sold a nursery-maid some poisonous pills with which she committed suicide. (*Journ. de Chim. Méd.* Sept. 1842.)

In Belgium the law is similar, though the fines are smaller. Apothecaries are bound to keep poisons, such as white or black arsenic, corrosive sublimate, and opium, safely locked up in a place of which

they alone have the key. Poisons are not to be given to any one without an order written and signed by a doctor of medicine, surgeon, accoucheur, apothecary, or some well-known person, and with directions to be employed for some known purpose, under a penalty of 100 florins, (£8. 6s. 8d.) to be doubled on each repetition of the offence. These directions must be preserved, under a penalty of 50 florins.

If an apothecary discovers, or suspects, that there is an error in a prescription, he is bound to go to the physician or surgeon who wrote it in order to learn his intentions, but is not to correct the suspected error of his own accord.

Even the stringent laws of France, however, are not sufficiently rigorous for M. Cormenin, who proposes to forbid arsenic to be sold by retail under any circumstances. Medicine, he says, has derived no real advantage from it; and householders, instead of using arsenic, might stop up the holes in their walls more carefully. Nor would he allow it to be sold wholesale, excepting to licensed and well-known manufacturers, furnished with a certificate from the mayor, and a written declaration.

From this extreme of rigour, come we now to the other extreme of laxity, and let us see how matters are managed at home.

About a month ago, a medical practitioner in London, being in attendance on a lady suffering from inflammation of the bowels, ordered her to take a table-spoonful of potash water, diluted with an equal quantity of milk. The servant went to a neighbouring chymist, and procured an ounce of *liquor potassæ*, which was labelled "potash-water." Half an ounce of this was administered to the patient, who immediately exclaimed, "You have poisoned me; I am all on fire!" and appeared to be in great pain. The lady survived a fortnight, and, on a *post-mortem* examination, extensive disease of the stomach was found, as well as hæmorrhage in the brain. How much of this may have been caused by the potash it is utterly impossible to determine; but it is probable that the caustic accelerated her death, in spite of the immediate use of the stomach-pump and appropriate antidotes.

Another most important question remains, How should the blame incurred be divided among the parties concerned?

The practitioner, it seems, told the patient's sister that the remedy was an effervescing beverage like soda water, and offered to write down the name, but she said that this was unnecessary. The servant, when questioned by the druggist, did not know for what purpose the remedy was required. The druggist, again, appears to have given the medicine without any other warning but his question. The friends of the patient

were not struck by the want of effervescence in the solution. On the whole this catastrophe seems to have been one of those tragic incidents, where a single word would have been safety, but where that word was wanting.—*Annals of Chymistry and Practical Pharmacy*, No. 4.

LIQUOR OF HYDRIODATE OF ARSENIC AND MERCURY.

MR. DONOVAN has published farther observations on this remedy, containing a great mass of evidence in its favour. We can only make room for what follows:—

The dose has been variously represented. Dr. Kirby is disinclined to doses exceeding 20 minims, and this quantity he conceives sufficient to secure its curative effects. Sir Henry Marsh, in the case of a boy, twelve years old, began with 15 minims twice a day, and gradually pushed it to half a drachm; and at length the patient got half an ounce in divided doses during twenty-four hours, which only produced "very mild insalivation." In venereal eruptions, Mr. Cusack found one or two scruples three times a day sufficient; but even when larger doses were given, he did not observe any unpleasant consequences. Dr. Irvine's patient took ʒss. three times a day, for seventy-six days, and was only twice obliged to discontinue it for two or three days, owing to headache and sickness of the stomach. Dr. Graves's patient, a woman 60 years old, took ʒss. four times a day, for two months, with only two interruptions owing to disagreement. These instances show how differently the medicine can be endured by different constitutions. It is certainly prudent to begin with Dr. Kirby's doses; but after a while, as in the case of tartar emetic, a state of tolerance is induced, and then the medicine may be gradually increased at discretion.

The smallness of the quantity of arsenic and of the other elements, that sometimes effects a cure, is striking, and affords an additional proof of the energy which they acquire by combining chemically. In one of Dr. O'Reilly's cases, three drachms of the liquor were successful, containing $\frac{3}{4}$ grain of arsenious acid, $\frac{3}{4}$ grain of peroxide of mercury, and about $2\frac{1}{2}$ grains of acidified iodine; in another, $\frac{1}{2}$ more of these elements was required. One of Dr. Ferguson's patients was cured by $2\frac{1}{2}$ grains of arsenious acid. Dr. Osbrey succeeded with about a grain of arsenious acid; Dr. Graves with $2\frac{1}{2}$ grains; and Sir Henry Marsh, in an obstinate case of tinea capitis, with $\frac{1}{4}$ grain. Cases, however, occasionally prove of a very obstinate and tedious nature; and, generally speaking, skin diseases offer lengthened resistance to curative measures: thus Dr. Irvine's pa-

tient was under treatment 76 days, and required seven ounces of the liquor, equivalent to seven grains of arsenious acid; Dr. Graves' patient, of 60 years old, required 10½ grains; Sir Henry Marsh's, a child of 12 years, required a far greater quantity; some of Dr. Kirby's patients were a year under cure; and I know a lady, who being troubled with psoriasis almost all her life, is now, after a year's treatment, only beginning to improve.

The diseases in which practitioners have hitherto found the liquor of hydriodate of arsenic and mercury to be useful, as appears by the foregoing testimonies, are the various forms of psoriasis, impetigo, porrigo, lepra, venereal eruptions, both papular and scaly, pityriasis, sycosis, epheles, lupus, sibilens, and some uterine diseases.—*Dublin Journal of Medical Science.*

EXPERIMENTS ON KIESTEINE.

By DR. KANE, of Philadelphia.

My mode of conducting the experiments was this:—The recent urine was placed in open glass cylinders, of diameters varying from an inch and a half to that of a common tumbler, and protected from dust by paper covers. These were arranged in a dry, well-ventilated room, where the temperature was uniform and moderate, and were exposed in groups to the equal action of air and light. I examined them frequently during the day; but as the changes were not rapid, I determined after a little while to note only one set of observations in the twenty-four hours. My notes were always made upon the spot. If from any cause an individual observation or a series was unsatisfactory, or inconclusive, or if it led to a different result from others, I repeated it at once with increased care; and I was always careful to observe the constitution, habits, and circumstances generally of each patient.

The examination of the first group of cases satisfied me that the urine during pregnancy assumes appearances different from those witnessed under other circumstances, and which I was therefore disposed to regard as characteristic of that state. Subsequent inquiries confirmed me in the general accuracy of this opinion, but compelled me at the same time to admit its liability to exception.

The more obvious of these appearances regard the superficial formation described by Dr. Bird, and recently investigated by Drs. M'Pheeters and Perry; but there are others which point to a series of intestine changes somewhat more obscure, though scarcely less interesting. My observations applied to both; and I regret that the limited time at

my command during the studies preliminary to graduation obliges me to select a single class as the subject of this dissertation. I take, however, that indication which seems to me best fitted for practical usefulness in diagnosis, the *pellicular change*, and which I suppose to be most properly called the *kiesteine*.

The urine, submitted to observation in the way I have described, presents but little change during the first thirty-six hours. The mucous flocculi, if they exist, gradually subside during this period, forming a whitish cloud-like deposit at the bottom, and sometimes on the sides of the glass; while more or less alteration occurs in the colour and transparency of the fluid.

The surface remains for a short time entirely unchanged; but in most cases a greater or less number of shining acicular specks, apparently crystalline, begins to be seen within the first eighteen or twenty-four hours. These are generally scattered over the surface without regularity; but in some rare cases they are so disposed as to form a translucent film of uniform thickness, which afterwards assumes the more defined characters of the pellicle. How far these crystals are essentially connected with the formation of the pellicle, I am not prepared to say. In many cases I have not succeeded in detecting their presence, even by the microscope; and, indeed, I have failed to discover any *unvarying* indications whatever of the approaching development of the *kiesteine*.

The cloud-like appearance, which is alluded to by Nauche and Eguisier, although possessed of much interest, I have not found to be a uniform premonitor of the forming pellicle; I have supposed it to be nothing more than the enæorema of the older writers, depending upon the imperfect aggregation of mucous flocculi; for I have seen it repeatedly when there was no pregnancy to account for it, and it was uniformly absent where the fluid presented perfect transparency.

The time at which the pellicle begins to form varies considerably. I have seen it well marked at the end of thirty-six hours, and have known it make its first appearance as late as the eighth day. At first it is hardly discernible. It is generally seen forming at the centre or on the sides of the glass, presenting a delicate milky or bluish-white aspect. It is, however, in some cases uniformly disposed over the surface from the commencement, and assumes the appearance of a nearly transparent film, which gradually becomes more distinct. But it has not always the continuous strongly marked character which some have ascribed to it. I have seen it begin in striated irregular lines somewhat resembling a spider's web, in rings, circles, trapeziums, and irre-

gular fibres of every shape, which gradually became obscured by the full development of the pellicle.

When it has attained this stage, which occurs generally about the fifth day, it presents a continuous scum of an opaline white or creamy appearance, with a slight tinge of yellow, which gradually becomes deeper and more decided. The uniformity of this colour, however, is generally broken by granulated spots of a clearer white, giving it a dotted or roughened aspect. The crystals of the forming stage now appear like shining points, and I have sometimes found numerous small brownish specks, sprinkled over the surface, not unlike the gratings of nutmeg. It is at this period that the pellicle may be compared "to the fatty scum of cooled broth." In this state it continues for some time, preserving all its characters unbroken. The glass, where the surface meets it, is discoloured by a white opaline ring; and a series of such rings, varying in extent from a line to the fourth of an inch, marks the descent of the surface during the progress of evaporation.

The cheesy odour, mentioned by Dr. Bird as a valuable aid in diagnosis, and as "by no means unfrequent in those specimens in which the pellicle is very thick," I have found in but seven cases. Many pellicles of great thickness were entirely without it; and in two of those presenting it, the pellicle was thin and not very well developed. Drs. M'Pheeters and Perry were unable to detect it in either of the twenty-seven cases examined by them, and I have found it unequivocally developed in at least three cases in which pregnancy did not exist.

The pellicle, if left undisturbed for some days, breaks into cracks, commencing generally from the central portions, but not always extending to the edge of the glass. These are again crossed by other fissures, and the pellicle is more or less broken up. In the meantime, the flakes, which have been forming from the commencement of disintegration, have their edges depressed into the fluid, while at the same time the general thickness of the pellicle is much diminished; and this depression or dip gradually increasing, the depending particle is detached, and sinks slowly to the bottom. Its complete disintegration, however, is but seldom seen; being anticipated by the decomposition of the fluid. The deposit is of course considerably increased by the fallen portions of the pellicle, and is found irregularly disposed over the bottom of the vessel; but as I have remarked, most abundant on the side farthest from the light.—*American Journal*.

WARM BATHING.

THE story of Æson becoming young, from the medicated bath of Medea, seems to have been intended to teach the efficacy of warm bathing in retarding the progress of old age. The words *relaxation* and *bracing*, which are generally thought expressive of the effects of warm and cold bathing, are mechanical terms properly applied to drums or strings; but are only metaphors when applied to the effects of cold or warm bathing on animal bodies. The immediate cause of old age seems to reside in the irritability of the finer vessels or parts of our system; hence these cease to act, and collapse, or become horny or bony. The warm bath is peculiarly adapted to prevent these circumstances, by its increasing our irritability, and by moistening and softening the skin, and the extremities of the finer vessels which terminate in it. To those who are past the meridian of life, and have dryskins, and begin to be emaciated, the warm bath, for half an hour twice a week, I believe to be eminently serviceable in retarding the advances of old age.—*Darwin. The Loves of the Plants: Note on Canto 1.*

PRESERVATION OF LEECHES.

A QUANTITY of pure clay is procured, to which must be added as much pure water as will make it so plastic as to be easily formed into *irregular shaped balls*, say two inches and a half in diameter. These are placed into a square deep wooden box, or, what will answer equally well, a five-gallon keg; *a cover is quite unnecessary*. The leeches are then put in, immediately on which they creep down the sides of the balls of clay, and there remain. When required for use, the balls are carefully removed, and the leeches are taken out. It will invariably be found, that leeches kept in this way will, without hesitation and at once, lay hold of any part to which they may be applied. It will be borne in mind that the balls must be renewed weekly. It is unnecessary to expatiate on the advantages of this mode of preserving leeches over others, since a single trial will be found as satisfactory as it is here represented.—*Annals of Chymistry.*

CASES OF FRACTURE.

DR. BOMHARD RITTER has published some remarkable cases of fracture in Hufeland's journal:—

The first was a case of a highly hysterical young woman who fractured the forearm by a fall from a carriage. After the fracture had been carefully put up, the patient was re-

peatedly attacked by hysterical paroxysms, during which the opposing surfaces of the fracture became displaced, and so much injury resulted, that the patient died on the third day.

The second case was of a man, upwards of sixty years old, who fell from a height upon the ground. The head of the humerus was both fractured and luxated. The luxation was reduced, and the fractured parts maintained in apposition, and rest enjoined. After six weeks the bandages were removed, and by degrees the patient recovered the use of his arm and was able to return to his work.

The third case is one of comminuted fracture of both bones of the leg, in which, by means of extension and counter extension, and careful bandaging, the fractured portions of the bones were reduced, and after some time united, so that the patient recovered the use of the limb.—*Rust's Magazine*; and *Dublin Journal of Med. Science*.

LUBANSKI ON THE URINE OF PREGNANT WOMEN.

It is seldom as acid as in other individuals, occasionally it is neutral, and sometimes alkaline, and generally light-coloured. Donne suspected that the salts of lime for the most part are diminished during pregnancy, and that a part of them is taken to supply the materials for the formation of the foetal bone; and he found in many experiments instituted for this purpose, that by the addition of thirty parts of hydro-chloride of lime to fifty parts of urine, there was a precipitate of from forty to fifty parts of salt of lime in common urine, whereas in that of pregnancy the most he ever detected was thirty, and very often not near so much. Before making the experiment, the urine to be tried must be tested, to ascertain if it be alkaline or acid, and if acid, a few drops of ammonia must be added to render it alkaline, since the precipitate from phosphate of lime is soluble in weak acids. If the experiment be made with solution of baryta, there will be in healthy urine a precipitate of from twelve to fifteen parts of salts of baryta; in the pregnant, from five to eight, after twelve hours' rest. With reference to the question of pregnancy, Donne has, out of thirty-six cases, only twice been deceived. Lubanski found it decisive in three cases of pregnancy, where manual examination and auscultation proved unavailing. He proposes the following questions for investigation:—1. At what period of pregnancy does this diminution of the salts of lime take place? 2. Is it always constant? 3. In what relation does it stand to the increase of foetal ossification? 4. At what period does it cease.—*Ann. d'Obstetrique*, &c.; and *Dub. Journ. of Med. Sc.*

THE CHANGE WHICH EXTRACT OF RHUBARB UNDERGOES IN KEEPING.

It has been observed some time ago, by M. Landerer, that old extract of rhubarb, when mouldy, acquires a strong smell of storax. This has been confirmed by M. Reinsch, in the case of fluid extract of rhubarb which had been kept for several years in an unopened bottle, the extract being covered with a film of mould. This liquid extract was submitted to distillation, and afforded a slightly turbid water, with a great number of small drops of oil. The product of the distillation has a strong smell of storax, and was neutral to test paper. Ether, after agitation with it, becomes slightly coloured yellow, and acquires the odour of storax; after the evaporation of the ether on a watch-glass, there remain only a few drops of an aromatic oil, smelling strongly of storax, but which is very volatile, so that in about an hour no trace of the smell could be discovered on the glass. This smell of storax in extract of rhubarb which has become mouldy, arises from the formation of a peculiar oil. There will probably be many more of these oils discovered, originating in the putrefaction of vegetable matter. This oil of rhubarb appears to be analogous to the oil with the smell of musk, discovered by M. Rossignon, in decayed apples, which he has named *malolite*, and which is composed of $C H N O$.—*Repertorium für die Pharmacie*; and *Pharmaceutical Journal*.

LIQUOR TARAXACI.

A VERY elegant preparation has been introduced under the above title, and which, from the strong taste it possesses of the recent root, has been much used by medical men who have confidence in the remedial power of Dandelion. The following formula has been communicated to us:—

Dandelion roots, perfectly clean, dried, and sliced, 18 ounces.

Infuse for 24 hours in a sufficient quantity of cold distilled water to cover them.

Press and set aside, that the feculæ may subside; decant and heat the clear liquor to $180^{\circ} F.$, so as to coagulate the albumen; filter the liquid whilst hot, and evaporate in a drying room, or by means of a current of warm air (a water or steam bath will not succeed so well), until the product shall weigh 14 ounces. To this must be added 4 ounces of rectified spirit. Should the roots not have been perfectly cleansed, the product must be digested with pure animal charcoal. If properly prepared, *Liquor*

Taraxaci resembles in colour pale Sherry, and possesses the acrid taste of the fresh root in an eminent degree. The dose is from one to three fluid drachms. — *Annals of Chymistry*.

TRANSFUSION OF THE BLOOD OF A GOAT INTO THE VEINS OF A MAN.

By DR. BLIEDING.

A MAN 38 years of age was seized with an hæmoptysis, which continued so long, and so violent, that the only means of saving his life appeared to be by supplying the loss of blood by transfusion. On the fifth day after the attack a canula was introduced into the median vein of his left arm; a syringe, previously heated, was filled with blood drawn from the jugular vein of a goat, and about five ounces were injected into the vein of the man. Immediately he complained of a feeling of oppression; but this soon afterwards went off. An attack of phlebitis came on next day, but was subdued in eight days, by means of cold applications alone. His strength from this day returned, and at the end of three months he was able to resume his usual occupation. It is remarked, as the interesting point of this case, that it proves that the injection of the blood of one animal into the veins of another is not necessarily fatal. — *Journal de Pharmacie*; and *Edin. Med. and Surg. Journal*.

ADDENBROOKE'S HOSPITAL, CAMBRIDGE.

At a general meeting of the Governors, held on Monday last, October 31, Mr. Charles Lestourgeon, Mr. John Hammond, and Mr. George Murray Humphry, were elected Surgeons to this hospital, in the room of Messrs. Lestourgeon, Sen., Okes, and Abbott, who have lately resigned.

MEDICAL COMPETITION.

ON the death of Mr. Malcolm, which took place last week, there appeared in the *Times* of next morning letters from not less than ten medical men, offering themselves as candidates for the vacant office of Surgeon to the Surrey County Goal.

ROYAL COLLEGE OF SURGEONS.

LIST OF GENTLEMEN ADMITTED MEMBERS.

Friday, October 28, 1842.

W. M. Dalgliesh. — M. M. Bull. — J. Rogers. — J. H. Forster. — H. C. Wildash. — E. Moore. — J. Wade. — R. B. Penny. — W. Dalton. — J. H. Steele. — R. Barnes. — T. S. Lee.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED
CERTIFICATES.

Friday, October 14, 1842.

T. Peat. — J. Moore. — H. D. Scholfield. — J. Rhodes. — W. Boyd. — C. Telfair. — J. Vickerman. — J. I. Acheson. — J. M. Best.

A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending
Saturday, October 22, 1842.

Small Pox	10
Measles	17
Scarlatina	41
Whooping Cough	25
Croup	5
Thrush	8
Diarrhoea	11
Dysentery	3
Cholera	3
Influenza	1
Typhus	31
Erysipelas	1
Syphilis	0
Hydrophobia	1
Diseases of the Brain, Nerves, and Senses ..	136
Diseases of the Lungs and other Organs of Respiration	265
Diseases of the Heart and Blood-vessels	21
Diseases of the Stomach, Liver, and other Organs of Digestion	60
Diseases of the Kidneys, &c.	3
Childbed	5
Ovarian Dropsy	2
Disease of Uterus, &c.	3
Rheumatism	5
Diseases of Joints, &c.	4
Ulcer	0
Fistula	1
Diseases of Skin, &c.	2
Diseases of Uncertain Seat	130
Old Age or Natural Decay	45
Deaths by Violence, Privation, or Intempe- rance	24
Causes not specified	3
Deaths from all Causes	866

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude $51^{\circ} 37' 32''$ N
Longitude $0^{\circ} 3' 51''$ W. of Greenwich.

October.	THERMOMETER.	BAROMETER
Wednesday 26	from 27 to 43	29.48 to 29.56
Thursday . 27	34 47	29.59 29.65
Friday . . 28	33 47	29.58 Stat.
Saturday . 29	24 45	29.70 29.86
Sunday . . 30	24 46	30.00 30.09
Monday . . 31	39 51	30.13 30.16
November.		
Tuesday . 1	34 49	30.13 30.09

Wind, S.W. except the 29th ult. when N.W.
Generally fine weather: no rain since the night
of the 25th, when .72 of an inch fell.

CHARLES HENRY ADAMS.

ERRATA. — In our number of the 23d of
September, page 992, for "Dr. Debitu" read
"Dr. De Vitre." In our last number,
page 150, col. 1, line 19, for "petit" read
"petüt."

WILSON & OGILVY, 57, Skinner Street, London.

THE LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, NOVEMBER 11, 1842.

LECTURES

ON THE

THEORY AND PRACTICE OF MIDWIFERY,

*Delivered in the Theatre of St. George's
Hospital,*

BY ROBERT LEE, M.D. F.R.S.

LECTURE V.

On the Anatomy and Physiology of the Gravid Uterus.

AT the time of conception the whole uterine system is in a state of great nervous excitement and vascular congestion: the corpora fimbriata turn round to the ovaria, and the ovum, before or after escaping from the Graafian vesicle, and entering the canal of the fallopian tube to be conveyed to the uterus, is fecundated by the seminal fluid, which penetrates to the surface of the ovarium. Soon after this the corpus luteum begins to be formed in the ovarium, from which the fecundated ovum has been discharged. No opportunity has occurred of determining with certainty, in the human subject, when the ovum leaves the Graafian vesicle after conception, how many days it requires to pass along the fallopian tube, and what changes take place in the uterus before the ovum enters its cavity. Our knowledge of these subjects consists of inferences from observations made upon the lower animals soon after impregnation.

In fifty hours post coitum in the rabbit, De Graaf found the vesicles in the ovaria empty; but the ovum was not visible in the tube till seventy-two hours had elapsed. Haller saw the Graafian vesicle in the sheep ruptured two hours after; but he could not perceive the embryo in the uterus before the seventeenth day. Mr. Cruikshank opened a rabbit two hours after, and then the calyces or Graafian vesicles, which contained the

ova, projected much above the surfaces of the ovaria; and some of the ruptured orifices were just visible: but in many of these calyces there was not the least vestige of an orifice. In another rabbit, opened the third day after impregnation, the appearances were the same, only the corpora lutea were larger, and no vestige of an ovum could be discovered, either in the tubes or horns of the uterus. Another rabbit was opened the fifth day after impregnation: the appearances were similar, only the corpora lutea were increased in bulk, and no ovum could be detected any where. A fourth female rabbit was opened on the eighth day: the ova were in the cavity of the uterus, and "projected through its substance" about the size of a large garden pea; the embryo was not visible, but it became so by dropping distilled vinegar over the spot where it was known to be. Another rabbit was opened on the ninth day, and the embryo was seen within its amnion. Some corpora lutea had cavities, others none, nor the least appearance of orifice. The corpora lutea kept increasing with the foetus, were of a sand-red colour, and very vascular. Another rabbit was opened at six days and a half: there were ova in the horns of the uterus, which had just begun to fix, but did not adhere by vessels: they were much enlarged, compared with the sixth, and the side next the uterus had a round rough spot in it: the chorion and amnion were almost in contact with one another: they were easily turned out of the uterus, which embraced them every where loosely but at the bottom: corpora lutea were now increased exceedingly in vascularity, and nourished by a large vessel running across the tubes. Mr. Cruikshank examined another rabbit at three days and a half: the ovaria had the appearance as if the ova had not yet gone out; however, many of them were found in the uterus, and many in the tubes: I got, he says, about six; others were lost, from the great difficulty in slitting up the fallopian tubes without bruising the

ova: there were eight or nine corpora lutea in one ovarium, and two only in the other: on the side of the two, only one ovum was found, but twice as large as those on the other side. In another experiment at two days and a half, the ovaria were impregnated; but there were no ova in the tubes, nor orifices in the corpora lutea. Mr. Cruikshanks inferred, from these and other observations on the doe, which were made with the greatest possible care, and of which an account is published in the *Philosophical Transactions*, 1797, that the ovum enters the uterus on the fourth day.

The same volume of the *Philosophical Transactions* contains the following account of some experiments made by Dr. Haighton also upon the rabbit soon after impregnation:—"Having procured several virgin rabbits in a fit state for impregnation, I admitted one of them to the male. Twelve hours after it was killed, and on examining the ovaries several of the vesicles evidently projected: they had lost their transparency, and were become opaque and red: when punctured, a fluid of the same colour escaped. I made sections through some of them; but at this early period, the corpora lutea, which are formed by a thickening of the parietes of the vesicles, were not very evident; I therefore determined to examine them in a more advanced state. Another rabbit being admitted to the male, I examined it twenty-four hours afterwards. The colour of the fluid contained in the vesicles was similar to that of the last experiment. The vesicles projected more evidently, and their thickened parietes, manifesting the commencement of corpora lutea, were become more apparent. I inspected the ovaries of another rabbit forty-eight hours post coitum. At this period the vesicles seemed to be in the very act of bursting; and a semi-transparent substance, of a mucus-like consistence, was beginning to protrude from some of them; others, indeed, were less advanced. The fimbriated extremities of the fallopian tubes were preparing to receive their contents, as appeared by their having quitted their usual position, and embraced the ovaries in such a degree that only a small portion could be seen until the tubes were taken away. Sections being made into the thickened vesicles, the formation of corpora lutea appeared to have made further advances. From the appearance of an incipient rupture of the vesicles in this experiment, it was but reasonable to expect that their contents would soon have escaped; but as my views were directed to the formation of a corpus luteum, I deferred the next examination to a more distant time. In two days and twelve hours after coition, I examined the ovaries of another rabbit. The foetal rudiments had escaped; but the cavities of the ovarian ves-

cles had suffered but little diminution. Bristles were easily introduced by the ruptured orifices. In this experiment the advances towards the formation of a perfect corpus luteum were such as the period of examination would naturally lead us to expect. The contents of the vesicles having escaped, it was but reasonable now to look forward to a speedy obliteration of the cavity. I therefore examined these parts under similar circumstances on the third, fourth, and fifth day. In the last experiment there was but little vestige of cavity, consequently the corpora lutea might be considered as perfectly formed." I quote these observations of Dr. Haighton because they have been often referred to, and not because any satisfactory conclusions can be drawn from them.

Kuhlemann found Graafian vesicles of the sheep to have burst at the end of the first day; and Hausmann found them nearly all burst in seventeen hours.

Dr. M. Barry examined rabbits four, six, eight, and eight and a half hours post coitum, and he found the ova still within the ovaria, and apparently not very near the time of their expulsion. A rabbit was examined at eleven hours; when the ova were found to have made their exit from that organ; and at ten hours with the same result. Another was killed at nine hours; the ova were still within the ovaria, and their Graafian vesicles presented no decided indication of an approaching rupture: he says (in the *Phil. Trans.* for 1839), "I tried 9½ hours, when the ova were again found within the ovaria; while in another instance at nine hours they had escaped. At length, after nearly a score of rabbits had been devoted to anatomical inspection, for the single object of determining the condition in which the ovum leaves the ovary, the parts were found in a state precisely what I had so much desired to meet with; one of these animals, at ten hours, yielding me two ova that had left the ovary and advanced an inch into the tube, and two others that were still in the ovary, but beyond all doubt on the point of following them."

During the three first months of pregnancy, the human ovarium, from which the fecundated ovum has been discharged, and which contains the corpus luteum, is readily distinguished from the other ovarium by its greater size and weight, and by a prominence on some part of its surface above the adjacent peritoneum. On the point of this projection, there is always a small irregular depression or cavity where the peritoneum appears to have been torn. Numerous arteries and veins ramify around this prominence, and give it a red colour like blood. On cutting open the ovarium in the long direction, the corpus luteum comes into view, which is of an oblong form, rather

more than half an inch in length, and less than a quarter of an inch in thickness; it presents an entirely different appearance from the stroma of the ovary, and is wholly different from it in structure, and from every glandular part of the body. The corpus luteum is nothing but the empty Graafian vesicle which contained the ovum, surrounded by a layer of yellow granular substance which is formed subsequently to impregnation. The two coats of the Graafian vesicle are always enclosed within the yellow substance; and they can be separated from one another, and their existence as two distinct organized membranes as clearly demonstrated, as the amnion and the chorion. The innermost of these coats is smooth, and the outer layer rough and filamentous, and processes are sent out from this exterior layer which penetrate the yellow substance to a considerable depth, and in some parts go quite through it to the stroma of the ovary. The cavity of the Graafian vesicle varies in size in different corpora lutea; in some it is entirely empty, in others it is filled with a serous fluid, but I have in no instance seen the cavity of the true corpus luteum filled with blood or "lymph matter" of any description. The layer of yellow substance, which has, in the second month of pregnancy, a deep orange colour, is usually from a line to a line and a half in thickness, and when examined with a magnifier, appears to consist entirely of yellow granules contained in the cellular membrane, interposed between the outer surface of the Graafian vesicle and the stroma of the ovary. Blood-vessels pass through the yellow substance from the stroma of the ovary to the coats of the Graafian vesicle. In some specimens of corpora lutea, there is an irregular and unusually large quantity of yellow substance formed on one side of the Graafian vesicle, which causes it to press inward upon the cavity. The outer surface of the yellow matter is in immediate contact with the stroma of the ovary, which is sometimes slightly condensed, so as to produce the appearance of a capsule around it. This condensed portion of the stroma of the ovary is often thicker than both coats of the Graafian vesicle, and the mouths of divided vessels are distinctly perceptible in it, as in other parts of the substance of the ovary. In some specimens there is no condensation of the substance of the ovary around and in contact with the yellow matter, nor the slightest appearance of any capsule enclosing it.

As gestation advances, the corpus luteum gradually diminishes in size, the deep yellow colour fades, the coats of the Graafian vesicle contract, and in the fifth month its cavity is almost obliterated. In the seventh and remaining months of pregnancy, there

is no cavity within the corpus luteum; the coats of the Graafian vesicle have contracted still further, and assumed a white membranous appearance, with small processes passing outward through the yellow matter, somewhat like radii from the centre of a circle. A still further diminution takes place in its size, and in three or four months after delivery the yellow matter and coats of the Graafian vesicle have been entirely removed by absorption from the ovary; and except a small depression on the surface where the prominence had at first existed, and a slight condensation of the substance of the ovary beneath, there is no vestige left of the corpus luteum. As these changes continue to go on in the Graafian vesicle, and around it, subsequently to the discharge of the ovum and its other contents, they probably contribute, or are the means which nature employs, to fill up the cavity thus suddenly formed in the ovarium, and to promote the contraction and absorption of the coats of the vesicle after the performance of its proper function, and the necessity for its removal, has occurred—a process analogous to the conversion of the umbilical vessels, for example, into cellular tissue after their functions have ceased.

A corpus luteum is invariably formed in the ovarium after conception, and two or three where there are twins or triplets. Not unfrequently two corpora lutea are present in the ovaria where there is only one ovum within the uterus. I found a perfect corpus luteum in the ovary of a woman who died from inflammation of the uterus soon after the expulsion of a mass of serous cysts, or hydatids, as they are called, from its cavity. Corpora lutea, such as have now been described, may be regarded as furnishing the most unequivocal proof of impregnation, but it is necessary to know, that conception may have taken place, and that the corpus luteum may be so small and so imperfectly formed as to be in a great degree destitute of its genuine and distinctive characters.

In the ovaria of women who have never been pregnant, yellow oval-shaped bodies are sometimes found which it is difficult to distinguish from true corpora lutea. These false corpora lutea most frequently result from blood effused into the cavities of the Graafian vesicles, as Dr. Montgomery has observed, which assumes a fawn hue as the colouring matter disappears by absorption and undergoes various changes similar to those which are observed to take place in coagula of blood formed in the cavities of veins from inflammation of the coats, or mechanical obstruction. After a longer or shorter period, the blood is entirely removed, and the coats of the vesicle contract, and often assume a brown, yellow, or black colour. In these

false corpora lutea the yellow substance is contained within, or attached to, the inner surface of the Graafian vesicle, and does not surround it, as is the case in true corpora lutea. In advanced life a thickening of the layers of the Graafian vesicle not unfrequently gives rise to appearances resembling corpora lutea. These, and all other corpora lutea, are generally, but not invariably, found more or less deeply imbedded in the substance of the ovarium, or if they are near the surface, they are most frequently not in actual contact with the peritoneum, but have a small portion of stroma intervening. If there is a cicatrix over these, it has a more irregular form than in the small circular depression on the apex of the true corpus luteum.

In a specimen of false corpus luteum which I examined with Mr. Wharton Jones, not long since, there was yellow matter deposited in the coats of the Graafian vesicle, which were spongy and thickened. The cavity of the vesicle was distended with coagulated blood. The inner layer had a peculiar wrinkled appearance, similar to what Von Baer has represented in his figure of the true corpus luteum, and we could not help suspecting that this puckering had led him to entertain the erroneous views, respecting the true corpus luteum, which he has promulgated in his work *De Ovi Mammalium et Hominis Generi*; in fact, that he mistook a false for a true corpus luteum.

There are upon the table five specimens of the true corpus luteum in the second and third months of pregnancy; and two in the fourth, and several others in the seventh and subsequent months of gestation, and one three months after delivery. This specimen, [exhibiting it,] was obtained from the body of a woman, who died on the 11th July, 1838, in St. George's Hospital, in the second month of pregnancy. The appearance of the ovum made this certain. The left ovarium contained the corpus luteum, which was larger than the other, and had a considerable prominence on its convex edge, around which were seen ramifying a number of minute arteries and veins. There was a small circular depression at the point of this prominence, but a bristle could not be made to pass through it into the central part of the ovary. On cutting open the ovarium the corpus luteum presented itself of an oval shape, and of a deep or rather light orange colour, with the Graafian vesicle enclosed within it, the coats being thickened and contracted. The cavity was empty. With little difficulty, while the parts were under alcohol, I succeeded in separating one half of the vesicle into two distinct layers, which are clearly seen in the preparation; a bristle being interposed between them. If you look carefully through a magnifier at these two layers of the Graafian vesicle, and at the

drawing, I think you will be satisfied, as many anatomists who have done so have been, that this internal membrane is evidently something very different from "a layer of coagulable lymph," as has been asserted. The outer surface of the Graafian vesicle is so loosely attached by cellular membrane to the yellow matter, that it can easily be separated from it. Around the outer surface of the yellow matter, and completely investing it, there is a white layer varying in thickness, the outer part of which loses itself in the substance of the ovarium, of which it appears to form a part, and to be similar in structure. The inner portion of this white layer, which appears to be condensed stroma, is separable on the one hand from the yellow matter, and on the other from the substance of the ovarium, so as to give the appearance of a distinct membrane, considerably exceeding in thickness both layers of the Graafian vesicle. This preparation first induced me to believe that both layers of the Graafian vesicle are enclosed within the yellow matter of the corpus luteum.

FIG. 1.



The correctness of this view was soon placed beyond all doubt, by this specimen [exhibiting it] of corpus luteum in the second month of pregnancy. It is here most evident that there is no capsule interposed between the yellow matter and the stroma of the ovary, and that both layers of the Graafian vesicle are enclosed within the yellow matter. On one side the coats have been separated, and a bristle placed between them, that they may be more clearly seen. The separation of the coats was effected with greater difficulty than in the other specimen; and the fact rendered still more obvious that the inner coat was not a layer of coagulable lymph. Sir Astley Cooper and Mr. Wharton Jones examined this preparation, in the most careful manner, and satisfied themselves that the account I have given of the corpus luteum is

correct, and to Mr. Jones I am indebted for this accurate drawing, which has been engraved in the 22d volume of the *Medico-Chirurgical Transactions*.

FIG. 2.



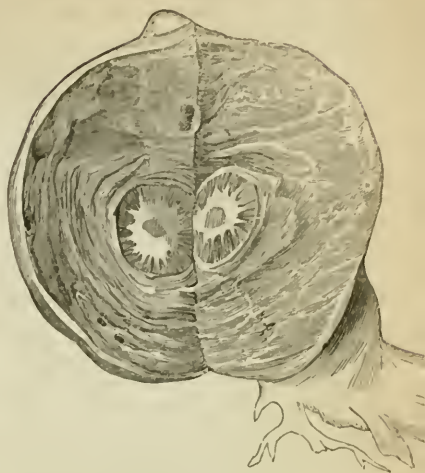
On the 25th Feb. 1840, I examined, with Mr. Wharton Jones, this corpus luteum [exhibiting it], which was removed from the body of a woman who died in the 4th month of her pregnancy. The yellow matter was here likewise in immediate contact with the stroma of the ovary, and had no capsule around it; within the yellow matter, and loosely adhering to it, was seen the Graafian vesicle, like a small white cyst. When this cyst was cut open under water, there was seen a very small cavity in the centre. There were two perfectly distinct coats, which formed the walls of this cyst, and these two layers were separated by a less dense structure, apparently cellular membrane of a bluish or milky appearance.

In this preparation [exhibiting it] of the corpus luteum in the seventh month, there is no cavity in the centre, and the coats of the Graafian vesicle present a thin membranous appearance with bands running into the yellow matter, the colour of which is very pale. The whole corpus luteum is much reduced in size. (See Fig. 3.)

In this preparation [exhibiting it] there is nothing unusual visible in the ovary except a slight depression on the surface, and a white line running into the stroma to the extent of about a quarter of an inch. This is the ovary of a woman who died three months after delivery, and which contained the corpus luteum.

The corpora lutea of the sheep, in these four specimens, [exhibiting them] present a very different appearance from human corpora lutea. They resemble soft, oblong,

FIG. 3.



vascular tumors, imbedded in the substance of the ovaria, and projecting, like small nipples, considerably beyond the surface of the organs. There is a smooth circular depression on the projecting point of each of them, but there is not the slightest appearance of a cavity in their centre, nor is there a distinct capsule like the outer layer of the Graafian vesicle surrounding them.

The corpus luteum of the cow, about the fourth month of pregnancy, forms a large mass in the ovary about an inch in diameter, and projects still more than in the sheep. In this specimen [exhibiting it], the blood-vessels of which have been injected, there is also a smooth circular depression on the most projecting part, but there is no cavity in the centre, as in the human corpus luteum. Between the stroma of the ovary and the corpus luteum there is only a thin layer of cellular membrane interposed. The absence of the central cyst and cavity in these corpora lutea renders it extremely probable that the Graafian vesicles had been entirely extruded from the ovaria after impregnation; and the same circumstance must have occurred in some of the ovaria in the rabbit, described by Mr. Cruikshank. On examining the corpora lutea of the sheep, cow, and mare, you will have great difficulty, I think, in believing that they can possibly be formed by a development either of the inner or outer layer of the Graafian vesicles, or by a separation of their two coats and the sudden formation between them of the peculiar substance constituting the corpus luteum. It seems contrary to all the sound principles of physiology to suppose that the coats of the Graafian vesicle which are about to be removed from the ovary as extraneous

matters, should suddenly lose their natural appearance, and grow into these great vascular and granular masses.

The human corpus luteum was first described by De Graaf in 1672. The account he has given of it is so good that I cannot forbear quoting it.

"Quæ verò secundum naturam aliquando tantum in mulierum testibus inveniuntur; sunt globuli, qui glandularum conglomeratarum adinstar ex multis particulis à centro ad circumferentiam recto quasi ductu tendentibus conflantur, et propriâ membranâ obvolvuntur. Hos globulos non omni tempore in foemellarum testiculis existere dicimus: quia post coitum tantum in illis deteguntur, unus aut plures, prout animal ex illo congressu unum aut plures fœtus in lucem edet. Neque illi adhuc in omnibus aut ejusdem generis animalibus semper eodem modo sese habent, in vaccis enim flavum, in ovibus rubrum, in aliis cineritium colorem sortiuntur: præterea aliquot post coitum diebus tenuiori substantia præditi sunt, et in sui medio limpidum liquorem membranâ inclusum continent, quo unâ cum membrana foras propulso, exigua solum in iis capacitas superat, quæ sensim ita aboletur ut postremis gestationis mensibus ex solidâ tantum substantiâ conflare videantur: enixojam imminuuntur, ac tandem evanescent." It was afterwards similarly described by Røderer, Dr. W. Hunter, by Haller, and others. Professor Baer is of opinion that the corpus luteum is formed in all animals by a thickening of the inner membrane of the Graafian vesicle. Dr. Montgomery believes the corpus luteum to be surrounded externally by the outer membrane of the Graafian vesicle, whilst its cavity is lined by the inner membrane of this vesicle. Dr. Paterson has adopted the same opinion. The first two figures accompanying his paper in the *Edin. Med. and Surgical Journal* [exhibiting them], evidently represent false corpora lutea. They have not one of the characters of the true corpus luteum. Fig. 2 shows nothing but a clot of blood within the Graafian vesicle. There was no ovum detected in the uterus, although minutely and carefully examined: "indeed," he states, "although this person had conceived, there can be little doubt, from the puckered and contracted appearance of the fimbriated extremities of the fallopian tube, which could hardly admit of a small probe to enter, that no ovum could have passed into them." "This woman had been married eight years, and had had no family," which, with other circumstances, makes it certain that she had never been pregnant; and that a true corpus luteum could not exist in the ovary. These figures, Dr. Paterson says, "are intended to represent the external and internal appearance of a *corpus luteum*, a very short time after the rupture of the Graa-

fian vesicle. "An interesting specimen of a corpus luteum," observes Dr. P., a very little older "than the above described one, occurred to Dr. John Reid, lately, in the Royal Infirmary: the patient, a young female about 18 or 19 years of age, came into the house labouring under peritonitis, of which she died on the third day after her admission. The left ovary presented a corpus luteum, with its edge about two or three lines thick, beautifully plicated, and of an intensely yellow colour; the centre was filled with a coagulum of blood. I had not an opportunity of examining this specimen till after its immersion in spirits: the plicated margin was then quite distinct, but the central coagulum was gone. The uterus of this girl was also slightly enlarged, and contained a soft decidual membrane." As Dr. P. does not state that an ovum was detected, I am entitled to presume that it was not, and that the proof of conception having taken place was wanting. The presence of a membrane in the uterus, like the decidua, has been met with when there was no pregnancy, or has been expelled from the uterus in dysmenorrhœa. In a court of law the evidence of pregnancy here would have been considered wholly insufficient. No figure is given of this corpus luteum, and no inference can be drawn from the description of it.

The third figure represents the appearance presented by an ovarium removed from the body of a woman who died of chronic disease of the brain. Here also no ovum could be detected by Dr. P. in the uterus, upon minute microscopic examination, to determine that pregnancy had actually taken place; although he infers "that impregnation had occurred from a fortnight to three weeks before death." If you examine this figure, you will see that there is no capsule interposed between the yellow matter and stroma of the ovary; and the same is the case with the fourth figure, [exhibiting it] which represents a true corpus luteum in the second month of pregnancy. Dr. Allan Thomson says, in his description of the corpus luteum, that a cavity existed in the interior of this corpus luteum similar to what is seen in all true corpora lutea; but Dr. Paterson says this statement "is erroneous, as its centre was filled up with a reddish grey-coloured fibrinous mass." In fig. 5 the Graafian vesicle is seen distinctly within the yellow matter; and this, you see, is in immediate contact with the stroma of the ovary; although Dr. Paterson says, in his description of it, that "external to the yellow body was also a firm membrane."

These are all the observations on the true corpus luteum contained in Dr. Paterson's paper, and I leave you to judge whether they are sufficiently numerous to warrant him in stating that he had "had many oppor-

tunities of observing that the proper substance of the corpus luteum was covered by two membranes." This inference, indeed, does not appear to have been drawn from an examination of human corpora lutea, but from those of the cow. "Any one may satisfy himself of this," he says, "by a very simple experiment. Let him procure the ovary of a cow containing the corpus luteum. In this animal the parts are so large as to be easily distinguished. An incision is to be carefully made through the peritoneum and proper tunic of the ovary; and then, turning these edges aside, no difficulty will be experienced in turning out the corpus luteum from the ovary. On examining it we find that it is still covered with its cellular envelope. Upon gently cutting through this, and reflecting it, we find that the orange-coloured corpus luteum is still covered by a proper tunic; and when this is cut through, and elevated with the forceps, the naked corpus luteum comes immediately into view. Now what else can this second tunic be but the external membrane of the Graafian vesicle?" Look once more carefully at this corpus luteum of the cow [exhibiting it], with all its blood-vessels injected, and see whether it agrees with the description I have now read.

Before taking leave of this subject, the importance of which you will hereafter be more aware of than now, I ought to state that Dr. Martin Barry thinks the corpus luteum is formed by a development of the outer layer of the Graafian vesicle. Prof. Owen also thinks that the yellow substance is formed in this way, and that the inner layer is compressed by the outer, and that the cavity in the centre of the corpus luteum is anomalous.

LUMLEIAN LECTURES,

*Delivered at the Royal College of Physicians
in London, 1842,*

By THOMAS MAYO, M.D. F.R.S.
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LECTURE I.

On Nervous Apoplexy and Palsy.

Case from Morgagni, requiring for its explanation an hypothesis distinct from that of compression: such hypothesis first distinctly afforded by Dr. Kirkland. Apoplexia gravior viewed by him as a nervous affection, but incurable; his hypothesis useful in milder forms of nervous apoplexy: illustrative cases. Nervous palsy, compared with that from compression: illustrative cases. Grounds for considering this subject; its importance, and the prior neglect of it.

In a former course of Lumleian lectures, I

professed to adopt, and I carried out, as far as time allowed, a method of inquiry, which the following considerations suggested, and which, if you will permit the recapitulation, they will explain.

I noticed, at the commencement of those lectures, the richness of our medical literature, both in collections of cases and in monographs. And I adverted to the kind of use to which these cases or series of cases are usually turned, with some expression of doubt whether these correspond to the magnitude and extent of the materials.

The most legitimate use, I observed, to which such treasures are subservient, is the formation through their means of general principles. The most common are, that of furnishing arguments in support of some preconceived opinion. They are in the latter way often converted into advocates for error, instead of being tests of truth.

But I then called the attention of my hearers to a third use to which these records are applicable; namely, that of carefully examining and commenting upon cases, without any preconceived hypothesis in the procedure. The aspect, I observed, which a given case assumes, when we look at it with a view to gain whatever information it may bestow, and that in which it may present itself when we would support or may be compelled to abandon our own preconceptions by its means, are very different; and though the latter relation may be more favourable to discovery, the former, as it is more unbiassed, is more favourable to truth.

The principles of inquiry then adopted I shall again endeavour to carry into effect, and I shall again seek materials in the works of John Baptist Morgagni.

As in my former lectures I have considered on this principle some important diseases of the thorax and abdomen, I shall on the present occasion furnish myself out of his stores with a topic among cerebral diseases. I shall speak of apoplexy, holding myself responsible not for an exhaustive inquiry into this subject, but for keeping within its admitted limits, though I may not attempt to define them, and using distinctions, not as final and satisfactory, but as tending towards ultimate truth.

"A certain citizen of Bologna," (the case occurs in the 4th letter of the 1st book on diseases of the head), "who was about 70 years old, of a pallid countenance, had a difficulty of hearing, and was sometimes liable to vertigo and faintness. He had also a tremor, which was attributed to his having handled quicksilver for many years past. In other respects he was healthy and robust; so that he frequently indulged himself in sensual pleasures. Having the day before indulged in this kind of excitement, being very sprightly both in body and mind, he walked

abroad with a friend; but scarce had he parted from his friend one hour and a half, when he was found dead in the road. We observed, that the upper limbs were very rigid and contracted, and that even then there was a little heat about the right side, though 24 hours had elapsed since his death. The abdomen we did not open, but diligently inspected all the viscera and vessels of the thorax, and found them all sound. In the head we observed the mouth to be drawn to the right side, and on the same side we observed also a large blackness; but whether from the blow in falling we could not discover. The blood in general was found very fluid, but there was no appearance in the skull or about it which corresponded with this external blackness. The brain was rather soft, flaccid, and discoloured, and in it some serum was found, but more on removing the dura mater than in the ventricles. The plexus choroides was beset with turgid vesicles, as it often is; and in the left vertebral artery, very near its anastomosis with the other artery, were thin small plates, some resembling a tendinous, some a cartilaginous, and some a bony consistence."

The case here given is one of those by which Morgagni illustrates his serous form of apoplexy. He deals cautiously enough with this distinction, but leans to the hypothesis that the serous effusion is in some cases the essential symptom. "If," says he, "you set aside the last circumstance mentioned, and some other things, which, though they may be in some measure accessory to the cause of an apoplexy, are nevertheless found in many who are not apoplectic, then that little quantity of serum will remain, to the acrimony of which you may refer the cause of the convulsion of the brain."

This case, however, and many others, which Morgagni adduces to the same effect, will easily bear another interpretation, and even illustrate another very important head of cerebral disease; which, particularly since the publication of Dr. Kirkland's commentary on apoplectic and paralytic affections in 1792, has obtained the name of nervous apoplexy.

In the Infirmary of St. Marylebone, I witnessed the examination of a patient who had died under cancer of the womb. She sunk, apparently, from pain and irritation occasioned by the local complaint; and it was observed that not the smallest appearance of cerebral disturbance had presented itself in her symptoms. In the ventricles of this female four ounces of fluid were collected; much more had escaped. It was noticed, indeed, that the ventricles were in a remarkable degree patent, and, as it were, dilated. Now, when in the very highest degree of cerebral disturbance a very small quantity of fluid is found, as in the case extracted from Mor-

gagni, and when, under circumstances in which the brain has during life undergone no such disturbance, a large quantity of fluid is found, the causation of apoplexy by effusion becomes surely very problematical.

The case quoted from Morgagni expresses that the subject of it was affected by a tremor, attributed to his having handled mercury. He was subject to occasional faintings, and had in other ways subjected himself, being advanced in years, to nervous irritation. This suggests a view of the subject on which it may be profitable to dwell.

The view to which I advert is indirectly sanctioned by all those writers who represent nervous affection as a cause, and not merely and always an effect, of diseased actions; but the first person who gave it a shew of practical efficiency in cerebral disease was Dr. Kirkland, of Ashby.

In his pamphlet on "Apoplectic Affections and diseases connected with the subject," there is a two-fold division of apoplexy. The apoplexy of former writers—a disease presumed to ensue upon vascular action producing sanguineous or serous effusion—constitutes the second head of the disease, to which Dr. Kirkland gives the generic title apoplexy.

Out of the cases to which other writers had given the name apoplexy in the generic sense, he detaches those in which vascular plethora, congestion, or extravasation, had not occasioned the attack. These constitute his *first* head of apoplexy, as he considers them the more violent. They are all marked by suddenness of invasion, but have also shades of difference, some being more vehement, others milder. The entire head or species he denominates nervous. The more violent form he describes in the following terms:—"We wish to be understood to speak of a disorder in which the patient falls down suddenly as if he were thunderstruck, into a profound sleep, with snoring and sonorous respiration: he is destitute of motion, except in the thorax and heart; insensible; and has a hard, full, disordered pulse, accompanied with a relaxed or dilated countenance, and a flushing of the face."

Suddenness of invasion, and the absence of evidence of prior arterial excitement or effusion, are the diagnostics on which Dr. Kirkland principally relies as identifying his nervous apoplexy. It may co-exist with, or be promptly followed by, sanguineous or serous effusion; but these are not its causes; and he supports his opinion, as to the independent nature of this apoplexy in relation to co-existing effusions, by arguments drawn from the phenomena of concussion, appealing to a case in which the blow and some of its most apoplectic consequences must probably have preceded by some time the effusion of blood. But, finally, he ex-

presses an opinion that this form of apoplexy (that is, the graver variety of it) is from the first a mortal affection. I shall presently point out how far the principles by which Dr. Kirkland limits our practice in this attack are likely to give it that very termination which he thus predicts.

For the immediate practical value, then, of Dr. Kirkland's views, as contemplated by the author, we must look to the milder modification of this disease, which is termed by him still, in contradistinction to the apoplexy of pressure, the second species of nervous apoplexy. His description is defective. The following case will best explain his meaning, as well as suggest practical inferences.

"A gentleman, *æt.* 40, was seized, soon after dinner, with sickness and giddiness. He fell down, and a hard sleep followed; but when stirred in order to awaken him, he muttered, and sometimes moved his limbs a little. It was evident that he was delirious, but his face was neither dilated nor relaxed, as is usual with those seized with the violent nervous apoplexy. An emetic was given him by his apothecary, which operated well, but without mitigating the symptoms; for I found him, some hours afterwards, nearly as described: his pulse about 90, and full, but without the irregularity so manifest in a vehement apoplexy. Ten ounces of blood were removed and five grains of James's powder directed every five hours, till his bowels should have acted. By the time that three doses had been given, this occurred freely, and he was apparently better. A similar procedure being continued, on the third day he was able to walk down stairs, and read the papers, his pulse being reduced to 70: still a sleepiness remained. For the removal of this, 'cupping and blistering was recommended,' Dr. Kirland observes, 'in consultation by another practitioner.' The rest I give in Dr. Kirkland's exact words:—

"When the surgeon came in the afternoon, the patient desired him to go up stairs with him to get the cupping business over; but it fatigued him; and when the blister began to operate, he became convulsed and delirious. A second blister was applied to the head during my absence; and when I saw him soon after, his countenance was relaxed and dilated, and death took possession in a few hours." "Hoffman," he observes, "has informed us of instances in which irritating purges had a similar result."

This case fairly exhibits our author's bias in his practice in apoplectic cases:—the readiness to admit other causes than vascular fullness or action, and to recognize the expediency of a soothing rather than irritating procedure in their treatment, as being disorders primarily of the nervous tissue—in this sense, that compression has not obviously preceded them; and this, I may observe, is the sense

in which I must be understood to repeat the term.

Puerperal apoplexy has often occurred with very little antecedent vascular excitement. The following cases, drawn principally from this head, may illustrate the practical bearings of the above hypothesis. Four of them are cases of puerperal apoplexy; and of these four, two fall under the head of nervous apoplexy: no vascular action or congestion appears to have preceded them. In the 4th and 5th case much vascular action or congestion must have preceded the attack; and in one of them the effect of treatment adopted consists with the view taken of this distinction. One of the cases here given, the second in order, is one of nervous apoplexy occasioned by fear.

A healthy woman, aged about 30 years, near the full period of gestation, fell down suddenly: she instantly became insensible, and a stertor ensued, accompanied by a hard vibrating pulse, and violent convulsions; these returned periodically. A natural presentation of the child being ascertained, it was presumed that delivery would soon take place, and this event, as was hoped, would bring with it a mitigation of the above symptoms. It did occur in a few hours; yet the symptoms of apoplexy remained unabated. Dr. Kirkland therefore gave the patient 30 drops of laudanum. Next morning, the insensibility, stertor, and convulsions, remaining, after a clyster, which had a proper effect, 20 drops of laudanum were ordered every 10 hours till the symptoms should abate. At the end of the third day advantage had manifestly been gained over the disease. In four days recovery appeared certain: it happened accordingly.

In this case, it will have been observed, the pulse is described as hard and vibrating.

Mrs. B. about 40 years old, had an apoplectic seizure after a great exertion from fear. She had lain about 24 hours, without speech or having swallowed any liquid. She was then forcibly raised in bed, and a spoonful of a solution of aloes in wine put into her mouth. This was done every hour with broth, and wine and water intervening, till evacuations were procured; which, with other means, had good effect, and she recovered, except that a considerable hemiplegia remained, and some affection of speech. This case is given by Dr. Darwyn.

About 14 years ago, at Tunbridge Wells, I was sent for to a case nearly the counterpart of the one first narrated. The lady, aged 26 years, had suddenly fallen into a state of complete insensibility, on which stertorous breathing rapidly supervened. In this state she was first seen by me, about two hours from its commencement. She was delicate in figure and appearance; of a bilious temperament with no sanguine intermixture;

far advanced in pregnancy : her confinement, indeed, daily expected. I thought it expedient to have this lady cupped ; and I gave her some aperients and some calomel, modifying the vigour of this treatment in relation to her present state and general constitution. Not the slightest benefit, nor indeed any very obvious change, resulted from these measures. In about 30 hours she was delivered, easily, of a living child, with no relief to her symptoms ; in about 24 hours from that event she died.

Janet Allen, æt. 32, of a slender form and spare habit of body, being in good health at the time, was suddenly seized with unusually acute pain darting through the head while at the wash-tub. The pain was, however, momentary, but she complained of shivering and chilliness on going to bed. Her husband, next morning, found her in a profound sleep, breathing high. He succeeded in waking her, but she was unable to speak. Her head being raised from the pillow, she became sick, and vomited. Mr. Kellie, who reports this case to Dr. Cheyne, finds her pulse 110, full, and rather hard ; the right side completely paralytic ; a strong tendency to sleep, but a capability of being waked up. Attempting to speak, she was inarticulate. Twenty ounces of blood were removed in the morning, and sixteen in the afternoon, without any other change than that the pulse became softer, and the face less flushed. Calomel, with cathartics and a lavement, were given, from which free evacuations and urine resulted. The sequel of this case was similar to the last. The next day she was delivered of a child without any change of symptoms. As day advanced, she became more soporose, and the motion of the left arm ceased. The next morning, early, she died. She was examined. The contents of thorax and abdomen were natural ; the sinuses and external surface of the brain showed nothing abnormal ; but a coagulum of blood, weighing 11 drachms, was found in the left lateral ventricle.

The next case which I lay before you is furnished by Mr. Edwards, of Bath. Its prominent features are as follows :—A young married woman is taken in labour with her first child. After the pains have continued some hours, the membranes are ruptured ; but, through the ignorance of a female attendant, the pains are allowed to continue unassisted from Monday to the ensuing Friday morning : Mr. Edwards is then called in. He finds the os uteri nearly dilated, and one of the superior extremities presenting. With difficulty and much loss of blood from the placenta, he delivers this patient of a living child.

Meanwhile, namely, on the Thursday, first, violent pain of the head, next, dimness of sight, apoplexy, convulsions, and hemi-

plegia, had occurred ; and the latter symptoms continued unrelieved by delivery. Her pulse, when this occurred, was 130, full, and vibrating. Now the causes which led to this apoplectic attack were such as implied vascular action, and the practice adopted corresponded with this view. Twenty ounces of blood were taken from the arm, and, soon after, fifteen from the temporal arteries. The first abstraction diminished the frequency of the pulse, the second abated the convulsions. In two hours more, the pupils continuing dilated, other ten ounces of blood were taken : and this sufficed, assisted, as it was, by the action of aperients. By the eighth day, the patient was convalescent, being entirely free from cerebral symptoms.

Now if we contemplate the five cases here given, in no one of the first three have we any evidence of antecedent vascular fulness or effusion. In each of them, these vascular states, if they existed at any time, were probably consecutive to the nervous shock. And if we attempt to elicit from these cases principles of practice, with a view to preventing such consecutive congestion, and its effects, we are compelled to admit, that those two cases terminated the most favourably in which the practice had been most sedative and antispasmodic.

The two last reported cases commence, not in an overwhelming shock of the nervous system, but in pain of the head, and gradually proceed into convulsions and the apoplectic stupor ; the first of them with sickness. This sequence of symptoms places them in the class of apoplexy from compression, according to the experience of Dr. Abercromby*, which I am happy to accept, as giving value to my own ; sanguineous effusion being presumed to have occurred at the moment of "acute pain," and to have gradually increased. In the first of these two cases, that of Janet Allen, the symptoms were not observed early enough after their commencement to give depletory treatment its due efficacy. In the second case, these symptoms commenced while Mr. Edwards was in attendance on the labour. They appear to have been adequately appreciated, and to have been controlled by well-managed depletion.

Leaving for my next lecture some important modifications of the above doctrines relative to apoplexy, I proceed to consider that form of palsy which may be deemed analogous to the nervous apoplexy.

* Uniform and extensive extravasation of blood is described by Dr. Abercromby as characterising this class of cases, which begin with a violent attack of headache, and pass into apoplexy gradually. The rupture he seems to consider coincident with the first derangements of the functions of the brain.

Of the spontaneous or true palsy from a sudden loss of nervous power.

This is the expression by which Dr. Kirkland describes "a paralytic affection not brought on by compression, suppuration, or any mechanical cause." My concern with his views is entirely practical; and therefore I do not stay to ask the question why this is more a true palsy than that with which he thus contrasts it. It is the form of palsy to which he applies his therapeutical solidism, his treatment based on the hypothesis that the brain may be dealt with in relation to its nervous, and not its vascular constituents.

Now in illustrating these views, I shall take a case from a class of affections justly considered by Dr. Kirkland as analogous to the nervous palsy which forms our present subject; because I can find no other case which so well illustrates the therapeutics applicable to this affection according to those views. It embodies a principle. This case is a paralytic affection from a concussion of the spine. The patient, a strong healthy man of forty, was thrown from his horse, and fell with much force on his posteriors. He soon complained of violent pain in the lumbar region, darting pains down the thighs, and want of sensation and numbness in the lower extremities, with coldness; the right leg least affected. The pulse was small and slow. Ten ounces of blood were taken away, and an embrocation applied to the loins.

On the 23d of September, 1786, the day after the accident, he was found to have no inclination to pass water, and the bladder was found in a flaccid state extending to the navel. Three pints of dark urine were drawn off by the catheter, assisted by pressure on the abdomen; 18 grains of calomel were given in the course of the day, in two doses, with a strong purgative mixture.

On the 25th, 20 drops of laudanum having been given the evening before, a greater degree of sensation was observed in the limbs. The water was still removed by the catheter and pressure; the motions were involuntary.

From the 26th to the 30th, the same treatment being applied, with 20 or 30 drops of tinctura lyttæ every eighth hour, the symptoms continued the same. This state, indeed, was unaltered, except in regard to occasional difficulty from indurated feces, requiring to be scooped out, to the 8th of October. The tinctura lyttæ being then given in drachm doses, the pulse became more frequent, and the sphincter ani contracted.

Urine, during this time, occasionally flowed involuntarily; but the case continued in a state of very slowly progressive improvement, with one drawback, namely, the

recurrence of involuntary evacuations on a blister being applied to the sacrum.

But on the 8th of October, a change was made in the treatment, in this respect, that all stimulants were laid aside, and the opiates, with certain antispasmodics, exclusively relied on; namely, sulphuric æther, and sagapernum. Under this class of remedies, we are told that "the stools and urine became regular and voluntary, the pulse became stronger, and the sensation of the lower extremities increased. The patient perceived no other sensible effect from the medicine than a degree of drowsiness, and having continued it to the subsequent January, he had no complaint left."

This case recommends to your consideration a principle which may be stated thus:—That in the forms of palsy which have the same relation to those ensuing on vascular fulness or rupture, which loss of power from concussion bears to that arising from compression, medicines presumed to influence primarily the solids of the system will probably have a more remedial agency than those which operate immediately on the blood-vessels; or, to state this principle in a more practical form, sedatives and antispasmodics will be more effective than stimulants or depletory measures.

The following case will further illustrate this principle:—Elizabeth Smith, æt. 68, of a muscular form and apparently a strong constitution, having for several previous months been inadequately nourished, and having felt a diminution of power in the right side, fell down in the street, and about a week afterwards was brought into the St. Marylebone Infirmary. From the time of this fall, which seemed not the result of any accident, she has been totally unable to stand unsupported, and had in a great degree lost the use of the right arm. Her bowels, she said, were generally either confined or irritable; the pulse not remarkable in character; her head entirely free from uneasiness.

From the 5th of November to the 3d of December, 1841, she was treated with aperients and the compound æther mixture of the Infirmary, and with one application of a blister, but to no advantageous result: occasionally some paralysis of the bladder manifested itself. She was then subjected to an opiate treatment. First, a scruple of Dover's powder nightly, then two grains of opium; the bowels being regulated by mild aperients, and having a disposition to diarrhoea, even under this practice. Meanwhile, her tongue became cleaner, and she obtained, first, comfort, then material improvement in the paralytic symptoms, the leg improving more slowly than the arm.

Much disposition to diarrhoea continued, and whenever this took place, the paralytic feebleness increased. Fermented stimuli

did not suit her; indeed her symptoms were ameliorated just in proportion to her freedom from diarrhoea, and her steadiness in the use of the sedatives.

To this effect of opium a contrast may be observed in a case, the symptoms of which strongly suggested to my mind an hypothesis contrary to that on which the last case was conducted, namely, an hypothesis of compression from effusion.

A tall and moderately stout gentleman, æt. 64, of the nervous sanguine temperament, who, with much mental exertion, had indulged through life in very full living, had been visited from the spring of 1840 to the present time, December 1841, by a series of paralytic phenomena, preceded by a sense of fulness, vertigo, and oppression. He can walk for a very few yards, finds difficulty in pointing his feet, and stumbles over the smallest impediment. He complains of weakness in the lower extremities, and of general difficulty in changing their attitude; and is often visited by spasmodic twitches; his arms are merely weak. I saw this gentleman first in July 1841, and have since, with temporary good effect, and never with apparent ill effect, pursued a course of mild mercurial aperients, and small blisters to the nape of the neck. The general health of the patient, the appearance of his tongue, his countenance, and excretions, have been improving, with occasional fluctuations, up to this time, December 29, 1841; and the paralytic symptoms have been at least arrested in their progressive increase. It lately appeared to me expedient, as he was complaining of spasm and restlessness at night, to suggest to his medical attendant in the country that some form of morphia might be tried. To a letter recommending this I shortly received the following answer:—"On the morning after the first dose of one-third of a grain of muriate of morphia, with half a grain of calomel, the patient reported an improved night; but on my next visit, I learnt that in the course of that morning the lower extremities had become perfectly useless, continued so for 48 hours, and were only recovering their accustomed state when he was next seen."

The different results of the use of opium will be remarked in these two cases: on the high-fed valetudinarian, on whom palsy had been advancing gradually, with the evidence of antecedent cerebral congestion, and in the very different case previously described.

The following case will present a difficulty certainly not appreciated by the author whose views I am illustrating, in the application of a sedative treatment to the nervous phenomena of palsy: it arises probably from the complication, in the same person, of such pathological states with those of compression.

The patient, æt. 60, of a bilious tem-

perament and sinewy frame, was brought into the St. Marylebone Infirmary, having had, the day before, an attack of hemiplegia of the left side, with loss of voice and distortion of mouth, which had subsided in about two hours. His voice was still, however, thick, and he complained of vertigo. In the course of the day of his admission he had two similar attacks; and it was found that these attacks were repeated daily at about the same hour. The pulse, during these attacks, was sluggish and incompressible. Eight ounces of blood had been taken from his arm before I saw him; and two days afterwards, I directed cupping to the extent of six hours, with some doses of calomel and jalap. Having thus relieved his system, with, as he said, improvement of his general feelings, I was induced, by the intermittent character of the daily attacks, to prescribe five minims of Liquor Arsenicalis in camphor mixture, three times daily: three grains of calomel were given every night. This plan having been continued three days with no effect on the paroxysms, I was next led by my observation of the effect of sedatives on the nervous forms of palsy, to give him, one night, ten grains of Dover's powder. The paroxysm came on the next morning, with unusual heat of head, but it did not subside; it continued, indeed, for four days, and did not begin to subside until his gums were affected by repeated doses of calomel, which I gave, having first applied some leeches to the temples. His articulation then returned completely, but not so the use of his limbs. From this time, indeed, to the present moment, Oct. 24, 1842, a period of four months, the disorder has not resumed its intermittent character. During that time, the power of articulation has never left him; but the paralysis of the extremities is continuous, though now gradually obtaining some diminution under the use of strychnine. The leg acquires power more rapidly than the arm.

The continuous duration and increased severity of the attack, which followed, in this case, the dose of Dover's powder, must, I imagine, be considered as probably referrible at the time to that measure.

I have thus sketched, and endeavoured to illustrate, what appear to me important views relative to apoplexy and palsy, leaving to another lecture certain modifications to which, I apprehend, these views are liable. It may, perhaps, be asked, what addition is made by these views of that subject to previous science? How far the assumption that a form of apoplexy and palsy exists set up by other causes than vascular fulness, or effused blood, or serum, is either new or practically valuable? and whether, in the period so rich in medical inquiry which has elapsed since 1792, the deficiency, if it ever

existed, or if any was left by Dr. Kirkland, has been obviated? Certainly many authors have protested largely against excessive depletion in apoplexy, and have advanced instances in which the brain has, on examination, afforded no evidence of congestion on either serous or sanguineous effusion. But neither before that time had this subject been as clearly brought out as by Dr. Kirkland, nor since that time, though often adverted to, has it received adequate investigation.

The Greek physicians, generally, were humoralists in their pathology of apoplexy, though their humoralism took generally a wider range than that of the moderns. It is not, according to Hippocrates, vascular fulness or effusion alone that leads to apoplexy, but a superabundant or vitiated state of any one of his four humors—bile, atrabile, pituita, or blood.

The pneumatic school, founding its views partly on a supposition that a certain subtle aura was distributed by the arterial system, was likely to avail themselves of the machinery which this hypothesis supplied in accounting for such affections of the cerebral organs. This aura, indeed, was a vitalising principle, whose subtle nature would render it, in their philosophy, susceptible of affections from *moral* causes. Accordingly, the antecedents of apoplexy enumerated by Arctæus, the most eminent luminary of that school, comprise emotions of the mind, terror, despondency, great and unexpected pleasure, *γελως ασβεστος*, phenomena, the operation of which must be, in the language of our times, primarily on the nervous system.

In modern times, vascular fulness or rupture has been the great antecedent of apoplexy, modified, indeed, relatively to the extent of depletion indicated, by a theory, not of possible apoplexy from other causes, but of varying extent and kind, in that fulness or effusion which has been assumed as a cause. Such were mainly the views of Boerhaave and Vansweten; and that these views were entertained by the great pathologist with whose case I have opened this discussion, is sufficiently evident; and such were also the views of Frederick Hoffman. This eminent person, in dealing with physiological or pathological causes, certainly improves upon the theory of Stahl, who had gone no further than to impute the phenomena of living matter to the agency of a mind,—a proposition which, though possessing the utmost abstract truth, does not advance science. Hoffman felt this, and took a further step. He assigned to the living solids an active principle as *inherent* in them, implying and implied; which hypothesis, no doubt, formed the basis of that theory of irritability afterwards conceived by Haller, and qualified by

the remark of Dr. Whytt, that no part is irritable, that is, without nerves.

With these views, it is somewhat singular that in the class of paralytic and apoplectic affections Hoffman should contemplate no other as affecting the subtle element, to which he assigns the brain as its material organ, than the affections of the vascular system.

Thus, in the 11th section of his 7th chapter "De Hemorrhagiis," he will be found estimating the passions of the mind in their reference to the causation of apoplexy, as producing spasms, which disturb the general circulation just as a crumb of bread dropped into the trachea is seen to produce them. It would have been a more compendious and simple hypothesis to allow the mental affection to influence *immediately* the cerebral substance, and to occasion at once a stasis there. This assumption would better explain the causation of those apoplexies in which the stroke apparently occurs with no antecedency of vascular derangement, and in which, I may add, much relief ensues from abstraction of blood after the stroke, though very little or no appearance of plethora or congestion have preceded it.

Dr. Cullen's systematising and comprehensive mind could hardly fail to suggest another class of antecedents to these affections, than vascular compression or effusion. He thinks it probable, to use his own words, that "apoplexy does not always depend upon that cause, but sometimes upon a certain state of immobility of the nervous power, produced by certain circumstances in the nervous system itself, which seems to be communicated from one part of the body to another." But in regard to treatment, "many of these causes," he observes, "are so powerful, and thereby so suddenly fatal, as scarcely to allow of time for the use of remedies; and such cases have been so seldom the subject of practice, that the proper remedies are not so well ascertained as to allow him to say more of them." His reference to the more gently operating causes under this head is brief and unsatisfactory.

Dr. Darwyn was nearly cotemporaneous with Dr. Kirkland. His psychological views disposed him to apply to apoplexy a principle of distinction analogous to that of Dr. Kirkland, but far less practically developed: he expressly speaks, indeed, of oppression from congestion, or from effused blood, as only *one* of the causes of apoplexy.

It is interesting next to observe how far the subject of apoplexy, as considered abstractedly from vascular derangement, is taken up by that eminent investigator of the present day, Dr. Abercromby. "When a person," he observes, "previously in perfect health, falls down suddenly, deprived of

sense and motion, and dies, after lying for a certain time in a state of apoplexy, and when, on inspection of the case, we cannot discover in the brain any satisfactory deviation from healthy structure, this is the affection which I propose to call simple apoplexy." The force which the word "simple" seems to convey with it in this instance is, that the apoplexy so described is viewed by the author solely in relation to its phenomena, and not to any presumed cause.

That no hypothesis in regard to treatment suggested itself to this acute observer, as founded on the distinction here adverted to, is evident from his allusion to the treatment which these cases actually met with. He only, indeed, observes on this point, that they were treated "in the usual manner," an expression which certainly appears to recognise but one principle in the treatment of apoplexy. This mode of speaking almost appears to suggest, that the physician who used it had overlooked the consideration, to what an extent disease *is*, what treatment renders it? The therapeutical question is, in some sort, a part of the pathological.

If, finally, we ask ourselves how far the necessity of such inquiries as we have now entered into is superseded by the researches of the present day, I know no better way of answering this question, than a reference to those valuable Cyclopædias of medical knowledge which the last fifteen years have supplied us with.

The article Apoplexy, in the Cyclopædia of Practical Medicine, gives us considerations on this subject exclusively humoral; though Dr. Clutterbuck's great practical experience has occasioned him to lay down many practical rules limiting the extent of depletion, even on the hypothesis that vascular fulness or rupture is the great general antecedent of apoplexy: and thus he would be found, in many cases of that disease which a more enlarged hypothesis would term "nervous," using the same precaution in regard to depletory agents, which this latter supposition might suggest.

Very considerably more complete and comprehensive are the views afforded us by Dr. Copland, in his masterly article "Apoplexy:" he indeed adverts to a form of apoplexy designated nervous by authors; but when he gives his own estimate of this species, he reconciles it with a theory of *pressure*, as the recognisable antecedent to that state, in such a manner as not to leave any very definite grounds for a practical distinction. Thus, on this subject he entertains an hypothesis respecting the ganglial apparatus supplied to the encephalon as affecting its vascular system, and thus producing retardation or rupture. But the recognisable antecedent to the apoplectic state, will, in this point of view, still be retardation or rupture: for we

know too little of the functions of the ganglial nerves supplied to the brain, to assert or imagine a time for *their* operations in such a presumed sequence; though we might consider ourselves authorised to imagine that in many cases of apoplexy, those peculiarly which originate in moral causes, the affection of the encephalon itself, the organ of mind, is primary, and the affection of the vascular system of the encephalon secondary, rather than to entertain the reverse view.

We must not, I admit, indulge ourselves in speculating with Frederick Hoffman upon a propulsive force in the membranes of the brain as circulating a nervous fluid, or assume a knowledge of this subject analogous to that which we possess of the motions of the blood, as a groundwork for our pathology. Indeed, it is almost to be feared, that, possessed as we are of a completed theory of the *vascular* circulation, we may be tempted to speculate upon its agency in the causation of disease further than is warranted, and thus leave out of view the nervous system as originating morbid actions.

The following comprehensive remark, made by Dr. Copland, in his general account of the condition of the brain in apoplexy, seems to bring *his* vascular and nervous form of the disorder under a common category. "The various states" he observes, "of vascular impulse and action, impeded circulation in the veins and sinews of the brain, and distension of its capillaries, whether arising from the influence of the organic nerves or the blood-vessels, or from morbidly increased action from obstruction in the large veins, the lungs, or the right side of the heart, will either individually or in partial conjunction occasion the above effect, *i. e.* the phenomena of apoplexy, owing," he adds, "to the unyielding walls of the encephalon."

This statement will not propel us far on our way towards a theory of apoplexy as resulting from an emotion of the mind. The views, indeed, contained in the excellent article to which I advert, are sufficiently pronounced in favour of a nervous form of apoplexy to stimulate our curiosity,—sufficiently indeterminate to authorise our affirming that, as far as they are concerned, that subject is unexhausted.

I have been led, by the topic which I have chosen, to enter largely into the views of an acute and learned author, whose work, published sixty years ago, is now rarely or cursorily adverted to. I know not how I may have accomplished, or be accomplishing my purpose; but I am assured of its intrinsic usefulness,—namely, the giving weight to certain bygone views, which appear to contain the germs of hitherto unexpanded distinctions in a most important branch of pathaology. In my next lecture I shall proceed further into this subject.

MEMOIR ON
 ABRASION OF THE DIARTHRODIAL
 CARTILAGES BY FRICTION,
 AND ON THEIR
 ATROPHY FROM OTHER CAUSES.

BY ROBERT KNOX, M.D.

[Concluded from p. 178.]

(*For the London Medical Gazette.*)

WHILST joints giving rise to these reflections successively appeared either in the Practical Rooms or in the hospital, and were examined with more or less care by me, there occurred one of those cases which seemed to go far to explain satisfactorily the whole of the phenomena. This occurred in 1826, or early in 1827, and, if I recollect right, a brief account of the case was read to the Medico-Chirurgical Society in Edinburgh; and after the lapse of ten or twelve years, a second, and still more remarkable, one occurred, amply, as I imagine, (for wherever a theory exists, it behoves the surgeon to speak with every caution,) confirming my former views. The details of these cases I shall take the liberty of giving at some length. Of the other numerous specimens now before me, drawn from my own pathological collection, I shall say but little: nor is it necessary. The condition of the joint, in one and all of them, was predicted previous to dissection. They were stiff half-flexed joints, partially, as it were, though, in some cases, but slightly, ankylosed, if such a phrase could be applied to them. In fact, many of them seemed to be stiffened merely by malposition, or rheumatism; but, be this as it may, the absence of the cartilages of encrustation was predicted, and found invariably to have happened.

CASE I.—I select purposely the two extreme cases: they prove the theory best; and they seem to me least complicated with extraneous matter. Were I to select one of the numerous preparations before me of knee-joints taken from aged persons who had long laboured under a stiff half-bent knee-joint, and in whom, after death, it was found that the cartilaginous surfaces of the femur, patella, and tibia, were partially gone, it might with great propriety be said, a joint like this proves nothing as to the cause of the disappearance of the cartilages: they

may have been absorbed by some pathological condition either connected with themselves or the subjacent bones, the joint may have sustained some injury, a blow, sprain, or have laboured under chronic rheumatism: there may even have existed at one time inflammation of the cartilages, and their disappearance or absorption may have caused the semiflexed and stiff joints, and not been caused by it: but in Cases 1st and 2d, it will not be easy to apply this mode of reasoning in explanation of the appearances I shall now describe.

The knees of a stout and sufficiently well-made person were observed just before dissection to be slightly but obviously bent; both to the same extent, or nearly so: the flexion could easily be rendered greater, almost as much as is usual, but by no reasonable force could the limbs be extended. I predicted that on dissection there would be found an absence of the cartilages of encrustation at many points, and the bone probably polished or eburnated: this I did from a previous knowledge of such joints, but I was not at all prepared to explain all the appearances. The joints were examined with every possible care in the presence of a large class of students, and the preparations are now before me. The trochlea or pulley of the femoral condyles was much altered in shape: the outer one had lost its cartilage of encrustation, and acquired an ivory polish in some places; at others the texture of the bone had been worn into: the inner condyle had lost its usual breadth, and had acquired a peculiar exostotic deposit overlapping the shaft: the hollow for receiving the elevated ridge of the patella was greatly changed, its natural form having become narrow and twisted: the patella can scarcely be described, so irregular has it become: the cartilage of encrustation is entirely gone, and the bone either worn into or polished: two new osseous deposits have formed, seemingly in the tendon of the crureus muscle, one above and the other at the inner side of the patella; so that if the investigation had been carried no further the case might easily have passed for one of fractured patella, with subsequent chronic inflammation, and absorption of the cartilages. But such an opinion subsequent and previous inquiry had taught me was totally void of truth; the real cause of all these

changes being at the back of the joint, behind and somewhat above the inner condyle, in the form of a foreign body (free cartilage), about the size of a large bean, resting on the condyle, altering its nature, and closely wedged in betwixt the osseous surface and the synovial membranes, and in such a way as obviously to have been immoveably fixed in that position for a considerable time. The pain caused by this cartilage had led to the semi-bent position of the limb, as being the one best calculated to relieve the distress. In this position the cartilaginous and previously floating body had become fixed, or, perhaps, grown there originally, although it did not adhere by any pedicle when I examined the limb; and this malposition and altered form of the knee-joint led to all the pathological appearances I now describe.

FIG. 1.



I had almost forgot to mention, that the inner condyle of the tibia had begun to shew exostotic depositions, and a small one may be seen on the anterior portion of the upper spines of the tibia. The opposite joint resembled the one I have just described in all respects. But it is by no means unlikely that some pathologists might be inclined to ascribe what I here most confidently trace to a mechanical cause, to other causes—such as rheumatism, or inflammation, or to the same cause, whatever that might be, which led to the formation of the free cartilages. To meet these objections I shall detail my “second case.”

CASE. — A young man met with a severe burn a considerable time ago over the ham and back and upper parts of the leg, and this, in healing, caused a strong and permanent flexion of the limb at the knee-joint, so as to resemble greatly the usual contracted and anchylosed condition of this joint after some recoveries from white swelling. As the limb was thus greatly shortened, he required the use of a very high-heeled-and-toed shoe or boot. The cicatrix following the healing of this troublesome burn was extensive, hard, and placed transversely about the lower part of the popliteal surface; but, having thus partially, at least, recovered from this serious accident, he resumed his usual, and, to him, as it proved, dangerous, occupation of a groom, or horse-breaker. In a few weeks after, the horse he rode fell with him, by which accident the cicatrix in the leg was torn open violently, and an extensive and, as it proved, an incurable sore rapidly spread over the entire calf of the injured limb; and there being no likelihood of his recovering from this second accident so long as the limb was allowed to remain on, it was removed, in a few days after the accident, by Mr. Fergusson, by amputation in the usual way and place above the knee-joint, or a little above the junction of the lower and middle third of the thigh. The brief description of the amputated limb is as follows:—

1. The sore or ulcer, which was the immediate cause why amputation was resorted to, was an ill-conditioned and most extensive sore, reaching fully two-thirds down the back of the leg. On cutting into this longitudinally, with a

view of exposing by dissection the deeper structures, it was found that the posterior tibial nerve (internal popliteal of some writers) had been involved in the cicatrix, so that, had an attempt been made to have cut out this cicatrix previous to the second accident, with a view to the removal of the contraction and forced flexion of the joint, a portion, at least, of this nerve must have been cut out by the operator. This was the opinion of all those who were present at the dissection.

2. The flexors of the leg (semimembranosus, tendinosus, and biceps) had suffered but little from the disuse of the limb, or rather joint. The gastrocnemius, on the other hand, together with the solens and popliteus muscles, had degenerated into firm pale cartilaginous masses, in which it was not easy to trace any remains of muscular fibres. The great artery and vein lay in their usual places, at a considerable distance from the surface. I ought to have mentioned that, by the first accident, the knee-joint had been contracted nearly to a right angle.

On tracing the extensor muscles (cruræus, vasti, and rectus,) from the upper edge, where they had been divided at the moment of amputation, downwards towards the knee-joint, it was found that, on approaching the knee, the tendon usually, in appearance at least, united, could readily be separated into two distinct portions, a superficial and a deep: the superficial followed its usual course towards the patella and over it, to become continuous with the ligamentum patellæ. The changes in the structure of the deeper and stronger portion of the tendon were remarkable: in its substance, and placed immediately above the original patella, was another, fully as large as the original one, developed in the centre of the tendon of the cruræus, and lined on its articular aspect by a portion of the tendon itself; this again was invested by the synovial membrane of the joint. This singular structure, which was, in fact, an accidental or abnormally formed patella, had evidently been developed in the tendon of the cruræus muscle as a consequence or result of the limb having been used or walked on when in a contracted or flexed state; and yet there could scarcely have existed any accidental fibro-cartilage in the tendon to

serve as a basis for this newly-formed sesamoid bone. Many surgeons have thought that by unusual friction abnormal synovial capsules may be, and are, formed; to this another fact must now be added, viz. the accidental formation of abnormal sesamoid bones as large as the patella, seemingly originating in mere mechanical change in the form of the limb, and that too, though not preceded by any fibro-cartilage, heretofore considered as an essential preliminary stage in such formations*. To return to the further examination of the limb.

In that layer of the united tendons of these muscles which lay over the one I have just spoken of, and which, in fact, could be easily traced to the muscular fibres of the rectus, to which, indeed, it belonged, I found another small bone or patella developed, placed immediately over the regular patella; and lastly, on the fore part of the shaft of the femur, a few inches higher up, there existed what at first appeared to be merely an exostosis somewhat larger than a walnut. The saw of the surgeon had gone through this exostosis, as a portion merely of the femur, during the amputation.

Before describing the many interesting points made out by a vertical section of the preparation, I may first mention some other circumstances connected with the second accident; that, I mean, which led to the removal of the limb. Although not suspected during life, the heavy fall from the horse had fractured the bones of the leg in several places; one fracture ran through the malleolus externus into the joint; another ran obliquely through the tibia, commencing about three inches above the ankle-joint: it proceeded first across the spine of the tibia, then twisting spirally so as to reach the posterior surface of the bone, it also penetrated into the joint; higher up there was a most distinct longitudinal fracture or fissure in the tibia, moving upwards for about two inches; some blood was effused into the ankle-joint. None of the ligaments were torn; and my notes merely further add, that not the slightest displacement had taken place in any of the fractured portions; so that their detection during

* As the examination proceeded, it was found that the new-formed patella here spoken of was composed of two portions.

life, or in any other way than by dissection, seemed impossible. The cartilages of encrustation in the ankle-joint were of a deep red colour; but no laceration could be detected either in them or in the investing synovial capsule.

A vertical section of the preparation was now made: this extended from the point where the femur had been divided by the surgeon quite to the middle of the tibia, and of course traversed the knee-joint vertically and mesially, dividing at the same time into nearly equal parts the original patella, all those of new formation, and the exostosis on the shaft of the femur.

This examination gave the following results:—The exostosis on the front of the shaft of the femur had at one part united completely with that bone, so as to form, as it were, but one; a common periosteum surrounded them: but at another, and that a very considerable portion, it was easy to shew, by the presence of muscular and tendinous fibres betwixt the femur and the new growth, that the latter had been formed first in the centre of the tendon of the cruræ; that, in fact, it was of the same nature, and owed its existence to the same causes which produced the accidental patellæ; that it had grown to the femur, and not from it. The bone in question, which I have hitherto called an exostosis, was simply an elongated accidental patella, formed in consequence of the altered form of the knee-joint, and of the unusual pressure and continued extension of the muscles: as these causes continued to operate, and even to increase so long as the limb was used in that altered form, the soft parts between the new-formed bone and femur were absorbed, and the elongated accidental patella becoming firmly and inseparably united to the shaft of the femur, might thus in time have been mistaken for an exostosis growing from the bone, instead of to it.

I cannot refrain from believing that this preparation is one of much interest, and calculated to extend our views in respect to the formation of new bone under a variety of circumstances. Here a bone forms in the centre of a tendon, having interposed between it and the shaft of the femur, tendinous fibres, cellular and adipose tissue, and periosteum. By and by all

these tissues are absorbed or disappear, the new-formed bone grows to the original femur, becomes identified with it, is covered at last by the same periosteum, inclosing both as if they had always been but one bone. An inspection of the preparations, or of the accompanying sketches, will, I feel assured, convince every unprejudiced reader that I have described accurately the history of this new and singular formation of bone.

As the patient died some days afterwards, an opportunity thus offered of examining the entire shaft of the femur, and of tracing fully out the effects of what I must always consider as merely mechanical causes. Exostoses have usually been described as growing from the bones; and no doubt they generally do; but I am prepared to prove that they occasionally grow *to* the bones, and were at first formed in certain tendons or soft parts at least, whose original tissue permits of a ready change from tendon to bone; and this seems peculiarly the case with the extensors of the leg, or cruræus, vasti, and rectus muscles.

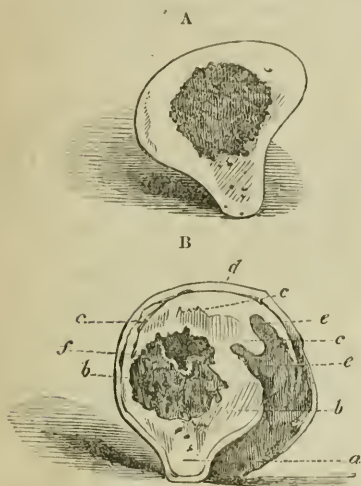
FIG. 2.



Fig. 2. Longitudinal section of a part of the upper portion of the fe-

mur: the lower end, in short, of the part connected with the head of the bone being the portion through which the surgeon's saw passed. It displays the extent to which the osseous deposit had proceeded, to within a distance of about three inches from the trochanters. So high as it went, it proved its origin from tendinous fibres. (Fig. 3, B.) This sketch shews the

FIG. 3.



extremity of the same section (A and B) before it was divided longitudinally, contrasted with A, which is merely the section of a healthy femur: *a* the linea aspera; *b b* the old shaft of the femur; *c c c* new bone laid over the old shaft; *d* periosteum; *e e* soft parts, portions of the cruræus and extensor muscles, generally filling up the space between the old and new bone at this point, similar to what may be seen upon the other sections; *f* a dense cartilaginous mass growing in and filling up the medullary cavity of the old shaft. Nothing of this kind existed on the surface of the exostosis; there never, in fact, having been any medullary cavity in it. On the exterior of the old shaft those changes had commenced which usually take place after amputations, and which have been so well described by Scarpa and others; but they had proceeded to no great length: ten days only having intervened between the period of amputation and the death of the patient.

Before quitting the knee-joint, to seek for further illustrations and proofs of the correctness of these views in other joints, I may very briefly allude to five or six specimens collected in my museum of contracted joints, with whose history we were not so well acquainted. The difficulty in deciding on the exact nature of the pathological phenomena these joints present arises from the obstacles in the way of clearly discriminating between cause and effect. When we lay open a contracted-semiflexed joint, bent to an angle more or less approaching a right angle with the femur, and find the cartilages of incrustation abraded, broken up, a great part of them gone, the bone bare, polished, or deeply worn into, as if it had also suffered from abrasion, the form of the osseous surface of the condyles, patella, and tibia, singularly altered, &c. it is of course difficult to decide on cause and effect, since the contracted state of the limb may just as readily have been caused by and followed the disappearance of the cartilages (from some unknown cause, as atrophy, rheumatism, chronic inflammation), as the contraction may, by altering the form of the joint, have given rise to these changes. For my own part I feel disposed to think both views may be correct enough, applicable merely to different cases; but all that I have myself seen leads me to a belief in the efficiency of the cause I have assigned, and to give it a preference—viz. a mechanical change in the form of the joint.

Description of the knee-joints of a middle-aged male brought into the Practical Rooms.—Both joints were permanently but slightly contracted. In the right knee-joint a free cartilaginous body was found, under the tendon of the popliteus muscle, where a distinct sesamoid bone may also be felt. The foreign body could be pushed into the joint, and so made to disappear in the general cavity. The cartilaginous body was observed previous to the joint being fully laid open on the front. On this being done, the cartilages of incrustation were found to have been abraded, or, at least, to have disappeared from a considerable portion of the tibia immediately within the external lateral ligament of the joint. One half of the corresponding semilunar cartilage had also disappeared, and the

surface of the tibia had an ivory polish over all that surface from which the cartilage had been rubbed off. The corresponding condyle of the femur had suffered changes quite similar to the tibia, but, in addition, there was a deep hollow in the centre of the condyle, as if the friction, after destroying the cartilage, had commenced wearing away the bone. The cartilaginous incrustation of the patella had begun also to break up, and the shape of the bone to alter: the trochlea of the femur had also suffered, both in its cartilaginous and its osseous textures: the margins of the femoral condyles have become elevated and project. In the other knee-joint similar changes were found, but not to the same extent. No free cartilage was found in this joint; and in neither could be detected the slightest trace of purulent deposits, adhesions, or other symptoms of an inflammatory or ulcerative process.

A preparation in the museum, marked 1157, shews the extent of injury which may be produced, even to the osseous texture, so soon as the cartilages have been abraded or absorbed, in the event of the bones not becoming eburnated, which sometimes happens. In this case (found in the dissecting-rooms), besides abrasion of the cartilages, the articular surface of the outer condyle of the tibia has been worn down into a deep excavation of at least 3-4ths of an inch in depth; and its outer brim, in connection with the fibula, had given way, as if fractured. Unless the abrasion, then, be arrested in its progress by the process of eburnation, the bones themselves speedily suffer, as I have frequently observed. The knee was slightly contracted, but the history of the case is unknown. The adjoining bones are brittle and spongy.

1160 is an interesting preparation, but a verbal description may suffice to explain it sufficiently well. On that part of the inner condyle of the femur which plays on the corresponding surfaces of the tibia and its semilunar cartilage, there is an elevation of about an inch in length, and about the sixth or seventh of an inch at its greatest elevation. This seems to have interfered with the motions of the joint, and, by throwing the action chiefly on the external condyle, the cartilage has been rubbed off it (the joint being stiff and contracted), and from off the cor-

responding condyle of the tibia. On both surfaces, wherever most exposed to the friction, the surfaces have taken on a very perfect ivory polish, with the usual grooves and elevated lines on the surface. The remaining surfaces had begun to shew that they were influenced by this change: the patella begins to lose its shape, the tendinous attachment to the bone begins to ossify, the edges of the condyles of the tibia and femur to enlarge, become rounded, and to overlap the shaft; and the superior spines of the tibia are becoming irregular, elevated, and generally altered.

There is another preparation extremely similar to the above, but the changes of the osseous surfaces have gone further: I shall call it No. 1700. Its history I cannot find in my notes, but I feel assured that it was put up to illustrate the effects of abrasion and destruction of cartilage and bone in the knee-joint, and that there was a foreign body loose in the joint. The outer condyle has broadened out by an osseous deposit, so as to accommodate itself to the altered form of the joint, and to meet the changed position of the patella. The inner surface of the femoral pulley has proportionally narrowed.

In the stiffened knee-joint of an aged person (1701) there is even a deep hollow worn in the condyle most exposed to friction, although the adjoining part of the bone had commenced taking on the ivory polish. The cartilaginous covering of the patella and its opposing pulley had begun to suffer by abrasion. Thus it does appear that, in certain persons, a permanent alteration in the form of the joint, will, by altering its healthy action, give rise, by mere abrasion, or by the absence of all pressure, to a destruction of the cartilages of incrustation of the synovial membranes and of the bone itself, unless arrested by the timely change into the ivory structure*. The hock-joint in the horse frequently presents all these changes of loss of cartilage, porcelainous deposit, &c. The grooves on the astragalus, caused by the friction, have been mistaken for canals or reservoirs to hold the superfluous synovia.

* The ivory or porcelainous deposit is not confined to the mere surface on all occasions: in the first dorsal and last cervical vertebrae of the camel the change extends deeply towards the centre of the bone.

During the autumn of last year I happened to visit the museum of Dr. James Douglas, of Glasgow, and was much struck with an interesting case of diseased knee-joint, the details of which I had better give in his own words:—

DEAR SIR,—I have your note this morning, acknowledging receipt of mine. I hasten to fulfil the request contained in your note of Tuesday. I asked permission of the gentleman by whom the preparation was sent to the rooms (Mr. Lyon, one of the surgeons to the Infirmary), which he at once granted, to make use of the case.

An old man died of gangrene of the feet, after fever, Feb. 1842. One of his knees was removed to examine a fractured patella, which had resulted from a violent exertion many years before. He had never submitted to treatment for it, so that the pieces were about an inch and a half separate, and when he walked, he used to fall, from the knee bending under him.

Knee-joint was found full of pus, from inflammation developed in it, since his legs became gangrenous. The two portions of the patella must have grown considerably since the fracture, for each is nearly as large as an ordinary patella, the growth having taken place from the broken edges, and having rounded them, both from before backwards, and from side to side. The inferior fragment was attached to the tibia by its ligament, which was weak, and perforated with holes, probably in consequence of disease, and from the low inflammation which had been going on long in the joint. The upper fragment had the extensor muscles still connected with it, but from long disuse they were in a great measure converted into fat at their lower part. The lower edge of this fragment is firmly attached to the fore part of the femur, immediately above the commencement of its articular surface, by a thin, but broad and strong ligament, completely closing the usual communication between the lower part of the knee-joint and its upper expansion, which is frequently called the suberureal bursa. The cartilage is partly removed from this portion of patella, and the roughened part is connected to the front of femur by fibrous adhesions.

Chronic inflammation seems to have

been long going on within the joint. What remains of the cartilage on the ends of the tibia and femur has a swollen and fibrous appearance, and on the edges has a hole as if marked with the teeth of a mouse which had been gnawing it. From the notch of the femur, and some parts of the condyles of the tibia, the cartilage is quite removed, while the bone in some parts remains unchanged; but in others a degree of hyperostosis is going on. On other parts, where the bone is exposed, but where mutual pressure was made on it, the porcelain deposit has gone on to a considerable extent. On some parts of the femur, not articular, this deposit is going on in rounded agglomerated masses, with smooth surfaces. Some of these are still soft on the surfaces, admitting of being cut with the knife.

On the back part of the joint, and in connexion with the cervical ligaments, where there are naturally loose fimbriæ or fringes of the synovial membrane, there are several smooth cartilages, some round, like peas, and others convex on one side, and concave on the other, adapted to their situations, hanging loose into the joint, attached only by the slender duplicature of synovial membrane.

I look on this preparation with interest, because it confirms the view which I advocated in the *MEDICAL GAZETTE*, within the last year or two, about the origin of loose cartilages in the joints, illustrated by a preparation marked P. 29, in my museum, where there is a loose cartilage in the cavity of the tunica vaginalis, and another growing from the tunica albuginea still covered by the serous membrane.

Hoping that this may be of use to you, I remain,

My dear Sir,

Yours very truly,

JAMES DOUGLAS.

235, George Street, Glasgow,
March 12, 1842.

P.S.—I forgot to say that you may make any use you please of this case.

Dr. Knox, Edinburgh.

It were easy to extend this list with reference to the knee-joint, by describing numerous similar preparations in the museum; but leaving the matter in the hands of others, I shall conclude by a few remarks on the joints of the upper extremities.

Numerous specimens of diseased elbow-joints in my own museum illustrate perfectly the effects which an altered form of the joint produces on the cartilaginous and other tissues: the shoulder-joint presents a somewhat more complex subject of inquiry, as being combined with an inarticular tendon, whose pathology has by no means been made out.

In 1827, I published in the LONDON MEDICAL GAZETTE an account of several dissections of shoulder-joints which had evidently suffered some severe injury during the life of the person. What these injuries were could not be conjectured, as the dissections occurred merely in the Practical Rooms; but after considering all the appearances carefully, I ventured to draw the conclusion that in some, at least, there had been rupture or dislocation of the bicipital tendon within the capsular ligament. Soon after the publication of the Memoir alluded to, Mr. E. Stanley published in the 3d vol. of the same journal an account of some cases in which he suspected rupture of the tendon in question: these cases he considered as illustrating my dissections, and as being, in fact, the complementary part of my memoir, which, for the reasons assigned, I had it not in my power to publish. But still there remained this difficulty, that I had described dissections of joints with whose previous history I could not be acquainted, and Mr. Stanley had published the history of certain cases in which injury had been done the shoulder-joint, and rendering it probable that the injury was really a rupture of the tendon in question, but *unaccompanied by any dissection*, his patients having recovered easily from injuries unaccompanied by other serious lesions. As far, then, as regards dislocation of the long tendon of the biceps, the question remained pretty much as left by Portal, who considered it possible, and cited, as the most remarkable instance of it with which he was acquainted, the case of Louis XV. who, by a fall from his horse, had injured the shoulder-joint, which injury left a stiffness and intolerable pain, unalleviable by the most distinguished surgeons of the day. A quack bone-setter was at last reluctantly called in, who, by violently twisting the arm in all directions, relieved the King at once

from all stiffness in the joint, and from that agony which he had suffered for weeks previously. Portal states as his belief that there had been dislocation of this tendon, and that it had been reduced by the bone-setter. Boyer, on the other hand, points at the case, and criticises the statements of Portal as being totally unsupported by any pathological dissection on record. If I rightly understand that most distinguished surgeon, he denied the possibility of such an occurrence. In respect to rupture of the tendon by an accident, I do not find much notice taken of it until subsequent to the publication of my Memoir in the GAZETTE. Some eight or ten years afterwards, Mr. Adams, of Dublin, I think, read a brief notice to the British Association, if I rightly recollect (for I speak merely from memory), having a reference to the pathology of the shoulder-joint, but he took up a very different view of the matter from either Mr. Stanley or myself. He seemed to think that the occasional absence of the inter-articular portion of the tendon of the biceps was owing merely to rheumatism and ulceration, however induced, or atrophy. Now although I feel fully convinced that in certain of the dissections I had described, a rupture of the tendon within the joint had originally happened, I feel much disposed to coincide partly with Mr. Adams's view also, as applicable to other cases, or at least to his modification of it, that injuries might be inflicted on the joint, leading to the gradual softening and disappearance of that part of the tendon in question, altogether independent of any rupture. Both views, in short, appeared to me compatible with each other. Since then, I learn from a paper in the 24th Vol. (2d Series) of the Medico-Chirurgical Transactions of London, by Mr. Soden, that a paper had been published in the 14th Vol. of the GAZETTE, by Mr. G. Smith, on the "Pathological Appearances in Seven Cases of Injury of the Shoulder." On examining this paper by Mr. Smith, published in 1833-34, and therefore seven years subsequent to mine, it seems that the cases were all like my own in this respect, being without any previous history of the case during the life of the person. Suspicions might be entertained fairly enough, that in some

the appearances were entirely *post-mortem*, and in others partially so: nor is the eburnation of some of the surfaces any direct proof to the contrary. Thus the question of the possibility of a rupture and of a dislocation of the tendon of the biceps remained nearly where it was. A case of dislocated tendon is quoted by Mr. Soden from the *Encyc. Method.* as quoted from Mangel; but the case is said not to be a clear one. Mr. Hargrave's case is mentioned also, of a subsequent date; so, likewise, are those of M. Dupuytren and Sir A. Cooper. It is admitted by Mr. Soden that most of these cases, whether of rupture or of dislocation, are extremely imperfect. Mr. S. gives two cases of dislocation of the tendon; if they were clear to Mr. Soden, and his coadjutor quoted in the paper, Mr. Richard Partridge, they are, by no means, to the reader. There are two cases mentioned, and there is but one woodcut, which corresponds precisely to neither description. One of the diseased joints seems to have been sent to Mr. Partridge for his examination and opinion thereon; but it is not stated which was sent, so that the reader is left in doubt and conjecture as to an essential part of the history of these cases. The following statement is placed underneath the woodcut: "Front view of the preparation in King's College Museum, shewing the displacement of the biceps tendon from its groove, and the head of the humerus drawn upwards and forwards in contact with the acromion and coraco-acromial ligament." Now one naturally asks, what preparation is this? for there is no mention of any such in the body of the paper; and so we are left to conjecture that Mr. Soden had presented *one* of the diseased joints to that museum. But this is a mere conjecture on my part, for no where is this hinted at, neither is it said to which of the cases it belonged.

It would seem (or at least I gather from the heading of the paper) that Mr. Soden's notes and brief history of the cases had been sent originally to Mr. Partridge to be read to the Medico-Chirurgical Society in London, and that Mr. Partridge had added thereto some remarks of his own. Some observations on these remarks I have put into a note; the whole matter is unworthy the running text, but still it

may serve to explain to the reader one at least of the circumstances which have a tendency to mystify and confuse many medical histories which, if stated fairly and candidly, would be intelligible to the plainest capacity*.

On looking over the MS. catalogue of my museum, I have observed, since writing the above, one or two cases of dissections, made several years ago, which seem to bear on this very obscure matter—I mean the pathology of the shoulder-joint, and of its inter-articular tendon.

Fracture of the anatomical neck of the humerus.

In an aged female subject, during the course of a careful dissection of the shoulder-joint, a fracture in the anatomical neck of the humerus was observed. At what period the accident had happened which led to this could not be ascertained, but the broken bones had not united by any osseous deposit. The fracture was within the capsular ligament, and likewise, in a great measure, within the synovial capsule. The surrounding muscles had not, apparently, sustained any injury, being all sound both in respect to their tendons and muscular parts: even the long tendon of the biceps was untouched, and perfectly healthy in every respect. The joint showed no appearance of ever having been inflamed; the cartilage of incrustation was sound.

Ruptured tendon of biceps.

December 1836.—Since my first communication regarding rupture of the tendon of the biceps, several facts and observations have occurred to me which

* If Mr. Soden had himself read Mr. Stanley's paper in the *MEDICAL GAZETTE*, 3d Vol. he would have seen the reference made, in the *first instance* by Mr. Stanley, to my Memoir, and farther, the remark (I quote from memory, not having the volume before me) that I was the first who had drawn the attention of pathologists to this subject. The omission of all mention of the *earliest memoir* on the pathology of the biceps tendon, I ascribed, not to Mr. Soden, but to Mr. Partridge, who, true to his class (Londoners), was bound to strike out any view or circumstance in any memoir of mine not of London growth. Some of his colleagues go even further than this, as may be seen by a reference to a zoological work published lately by one of them, wherein, amongst numerous other amusing mistakes, the cranium of the porpoise, or piked whale, has been mistaken by this profound comparative anatomist for that of the mysticetus. All this comes from trying to make use of property which does not belong to the person.

may possibly still further elucidate this obscure subject.

On dissecting the right shoulder-joint of a stout muscular man, the long tendon was observed to present its usual strength and structure until a short way after entering the bicipital groove of the humerus; or, in other words, where it came in contact with the synovial capsule of the joint. Here it suddenly diminished to about a fourth of its usual thickness, and appeared likewise altered as to structure. Having reached the top of the groove, it adhered to the adjoining parts of the capsule and to the tuberosities, and could not be traced into the joint. In every other respect the joint was healthy, and presented no appearance of having been at any time dislocated. The cartilages were every where as healthy as in a young person; so that, if the altered state of the tendon of the biceps, and its total disappearance within the joint, is to be attributed, as some have done, to the pathological condition called by the French pathologists "*usure*," and by some "*absorptio senilis cartilaginum*," here is evidently a case which cannot be forced into this category. The age of the person seemed to be about thirty, and with the exception of the absence of the tendon of the biceps within the joint, there could not be a healthier joint in any one*.

Secondly, on conversing with Mr. F., he reminded me of a preparation found in the dissecting-room a few years after I communicated my original paper to the *MEDICAL GAZETTE*. In this case the long tendon proceeded no further than the groove, and the portion within the joint did not exist.

From these circumstances the very probable conjecture was formed by Mr. F., that this had been a case of dislocation of the joint, with rupture of the bicipital tendon; that the dislocation had been speedily reduced, but that the tendon had not re-united.

How far this view is supported by

facts drawn from the history of unreduced dislocations I am unable to say, but may here remark, that in the dissection of an unreduced dislocation of the shoulder-joint, evidently of considerable standing, the biceps tendon, although stretched and out of its groove, was not ruptured; the tendon of the supra-spinatus muscle had been somewhat injured, but not torn through; the capsular ligament was of great strength, and entire, enclosing, as usual, the head and neck of the bone, which rested on the subscapularis muscle. The circumflex nerve had been partially if not wholly lacerated, but had reunited; the deltoid, a good deal wasted, and beginning to alter, presented a remarkable ridge running from the acromion process to humeral attachment of the muscle. These were the principal appearances noticed; to which may be added, that the glenoid cavity had still a cartilaginous covering, but was partially filled up.

Partial dislocation of the tendon of the biceps flexor, with rupture of some of its fibres.

The right arm of a muscular male subject, aged 66, dissected in February 1837, threw much light upon the question of ruptured tendon of the biceps. In this arm the capsular ligament and all the parts connected with the shoulder-joint were quite healthy, with the exception of the tendon of the biceps. This tendon was about double its usual breadth where it corresponds to the groove of the humerus: about half of the tendon lay in the groove, and the remainder partly on the inner crest, partly on the side of the smaller tuberosity of the humerus. The part of the tendon which lay in the groove was sound enough, but that which played during life over the crest and smaller tuberosity was fretted, its fibres as it were worn through, ruptured, and spread out; so that in a short time, as it appeared to us, or on any violent motion of the joint, the tendon would have given way altogether, and would thus have constituted a case of ruptured tendon of the biceps within the synovial capsule. The surface of the tuberosity over which a part of the tendon had played was rough, not being covered with any soft parts or cartilage; and this, in the most evident manner, had been the cause of the wearing of the

* This case is remarkable as being entirely without any other morbid alteration; those previously seen by me being all more or less subject to the objection which has since been made to the view I originally took of such cases, viz. that the altered condition of the tendon uniformly coincided with an affection of the synovial membrane and cartilages of incrustation, and that these were attributable, first, to old age, or, secondly, to rheumatism. Now the above case happened in a comparatively young person, and the joint was perfectly healthy.

tendinous fibres, and the destruction of its synovial membrane. Being without any history of the person during life, it can only be conjectured that, at one time or other, and perhaps but a short time before death, he had experienced a dislocation of the tendon: this gave rise to its new position, its spreading out, and its partial destruction. It is worthy of particular notice, that the organic changes were limited exactly to what I have stated, and that the cartilages of incrustation belonging to the joint were quite sound and of their usual thickness.

It was upon this subject, and in the same extremity, that my brother noticed an unusual laxity of the scapulo-clavicular joint; the acromial end of the clavicle rising fully three-quarters of an inch above the *acromia scapulæ*. May not this person, then, have received some violent injury, displacing the tendon of the biceps, and luxating the joint spoken of, and even perhaps the shoulder-joint? The tendon of the biceps may not have recovered its original position, and, by being then exposed to friction, must, at last, have ruptured with little or no effort beyond the usual motions of the joint. We have here, then, a second case in which the tendon must indisputably have been ruptured altogether independent of the accidents of old age, called by French pathologists "*usure*" of the cartilages.

After what I have said, it will not, I trust, be supposed that I doubt the history of "*atrophy of the cartilages*" of the knee and other joints, as described by others. The removal of these structures, whether effected by vital organic changes within themselves, as many suppose, or by being acted on by the neighbouring tissues, as was Mr. Hunter's opinion, is a question I do not propose entering on. It is foreign, to a certain extent, to the object of this memoir.

I may now allude to other joints with a reference to these views and opinions. The cartilages of incrustation disappear from the acetabulum and head of the femur under a great variety of circumstances; and occasionally, but by no means so frequently as in the knee-joint, it has appeared to be owing to the effects of abrasure, and of unequal pressure and friction on the opposing surfaces. But there are

difficulties here calling for more extended inquiry. The following suggestions are respectfully thrown out for the consideration of the "critical inquirer into truth:"—Why the hip-joint should not present abrasure of the cartilaginous surfaces so frequently as the knee when its state of motion is altered, may be owing to this, that the motions of the joint are not so easily affected, in one sense, as those of the knee-joint. But I have very often, in looking carefully into the joint, found the cartilage thinned, and even broken up, at points where, at first, and on a hasty glance, the structures seemed unaltered. In cases of interstitial absorption of the neck of the thigh-bone, the cartilages of the joint always appeared to me much altered. I am aware that Mr. Gulliver, one of the most distinguished pathological observers of the present day, has given two cases of interstitial absorption of the neck of the thigh-bone without any accompanying alteration in the form or texture of the cartilages; and many more (though not of equal value) might be added to these; but the difficulties accompanying such cases could, I believe, be explained away. That one limb may be shorter than another, whether from an acquired or a congenital deformity, and yet the cartilages remain entire, appears to me explicable enough. If the limb retain most of its motions at the hip-joint, the cartilaginous surfaces are as much exposed to the due degree of pressure as ever. Should time permit, I shall return to this subject in a short appendix. Mr. Gulliver's memoirs merit the deepest attention from all surgical pathologists.

The little notice I have taken of contemporary writers, and of the standard pathologists of the present and past age, has not arisen from any overweening confidence as to the accuracy of my own views, but solely from a want of the necessary leisure to do so. The difficulty also of procuring many valuable works proves a great obstacle to the entering on bibliographical inquiry, at least in this city. Nor can it, I hope, be necessary to caution any but the very young surgeon or student that the views here brought forward, in respect to abrasion of the cartilages under certain circumstances, have a

reference solely to those circumstances, and are by no means intended to be applied to those other cases of destruction of cartilage by other causes—such as inflammation, ulceration, &c. The whole subject connected with the *disappearance* (I use this word to avoid any theory) of cartilages of incrustation, together with their synovial investing membrane, and not unfrequently the destruction of bone itself in joints where neither inflammation nor ulceration seems ever to have existed, merits an extended inquiry from surgeons and pathologists. In respect to *atrophy* of the cartilages as a disease *sui generis*, its possible occurrence seems undoubted: still, its whole history is involved in difficulty. A modified theory might, perhaps, reconcile both views. Let us suppose that to allow of abrasure or usure of the cartilages of a joint there must be present a peculiar condition of the cartilages themselves—a softening, in fact, caused by constitutional or other causes: it is by no means improbable that such a state occasionally happens.

Some good practical surgeons, however, seem to me to deny altogether that there is such a pathological condition as “usure,” abrasion, or even atrophy of the cartilages; ascribing, apparently, all such phenomena to inflammation, ulceration, &c. This seems to be the opinion of Mr. Syme*, judging from his silence in respect to such conditions of the cartilages. On the other hand, Mr. Liston admits the existence of atrophy of the cartilages as a pathological condition of the articular cartilages altogether independent of any preceding inflammatory or ulcerative process. His chapter on hypertrophy and atrophy of the cartilages is exceedingly practical, and merits the careful perusal of surgeons and pathologists.

CASE OF

ENLARGED BRONCHIAL GLANDS PRODUCING DEATH;

WITH REMARKS.

By Dr. GOLDING BIRD.

(For the Medical Gazette.)

ELIZA BURMAN, æt. 16, an exquisitely strumous looking girl, was admitted, under Dr. Bird's care, in July 1842, at

the Finsbury Dispensary. She had been the subject of extreme dyspnoea for several months, attended with but slight cough, and a scanty mucous expectoration: her nights were restless, and frequently passed in the semi-cumbent position. She had lost a parent, and some collateral relatives, by consumption. She had never spat blood, and so far from having lost flesh, was decidedly stout for her age: menstruation was regular. During the preceding year, the cervical glands on the left side had become considerably enlarged, and formed an elongated irregular lobed tumor, involving the parotid gland, and extending from the left zygoma to the clavicle, producing extreme deformity. The whole mass felt hard and unyielding to the touch; it had no superficial redness, and presented no tendency to suppuration.

On examining the chest, there was slight but decided flattening beneath the right clavicle; and there, as well as over the whole of the right chest, percussion elicited a dull sound. The respiratory murmur was replaced by bronchial respiration in the infra-clavicular and scapular regions, whilst in the middle and inferior parts it was puerile; the expiratory murmur was distinctly audible in the upper part of the chest, and the vocal resonance increased. Over the left chest, percussion produced a much more sonorous sound than was natural, remarkably contrasting with the right side; still the respiration was imperfectly audible, and in the upper part was bronchial. The heart appeared healthy.

There could scarcely be a doubt on the nature of the affection under which this girl laboured. The existence of tubercular deposit in the right lung was evident; the state of the left was less satisfactory: the probable existence of emphysema was, however, sufficiently obvious. The only doubt that could arise was as to the deposit in the lungs being of a malignant character, from the state of the cervical glands which existed; but the progress of the case, and the absence of the pink sputa, to which attention has been drawn by Drs. Stokes, Addison, and Cowan, removed all suspicion on this head.

Gradually the dyspnoea increased; the respiration became less and less distinct in the left side, which still retained its sonority on percussion; and

* System of Surgery.

some evidence of cerebral congestion appeared. The frequent dull, heavy headache; the noise in the ears; the flushed face, most marked on the left side, all bore witness to a state of brain explicable by the impeded return of blood from the head, from the pressure of the cervical glandular tumors. Shortly after some stupor appeared: from this she rallied sufficiently to be enabled to take some little exercise; when at last, after taking cold, dyspnoea became distressing, and she sank early in September, without emaciation, cough, expectoration, or any of those signs which mark the closing scene of the victims of consumption.

At the post-mortem examination the head was not opened. In the chest there were no pleuritic adhesions; the right lung was nearly solidified by the copious deposition of crude tubercles, scarcely any having advanced to softening; no cavity existed. The left lung contained much fewer tubercles, and was distended by emphysema; the bronchus on that side was completely flattened, so that only a very narrow fissure existed, through which air could pass. The cause of this pressure was found in two large bronchial glands, each nearly two inches long, between which the flattened bronchus was placed. All the lymphatic glands of the chest and abdomen were found exceedingly enlarged. On dividing the large bronchial glands, they were found full of white caseous matter, and free from any trace of the grey or black matter so frequently met with.

The heart was loaded with black blood, and the vessels turgid. The enlarged cervical glands had so far diminished since death, as to present no approach to the extreme deformity they produced during life. The body presented no appearance of emaciation.

REMARKS.—This case affords an example of a circumstance of occasional occurrence, viz. of a case in which copious tubercular deposit exists, not sufficient *per se* to destroy life, and ending in death before the commencement of any disorganizing process. There can be but little doubt that in this instance the immediate cause of the fatal termination was the constriction of the left bronchus by the bronchial glands, so as to prevent ingress and egress of the air to the left lung, the right being so full of tubercles as to

be incompetent to the task of arterialising the blood. The cerebral symptoms which preceded death, all indicative of congestion going on in the brain, are, I conceive, readily explicable by the pressure exercised by the glandular cervical tumor on the vessels of the neck. It is true that the pressure on the left bronchus was not sufficient to absolutely exclude all ingress of air, for after death a chink-like opening existed; still, when it is borne in mind that the enormously distended state of the cervical glands disappeared with the cessation of life, it is but fair to presume that a similar state of things might obtain in the case of the bronchial glands; and that although these were not found on the dissection so distended as to completely close the bronchus, still it is very probable that such might have been the case in the last hours of life, and then these bodies might have subsided in the same manner as the cervical glands.

I have now seen three other cases, in which death occurred in the course of phthisis, where the disorganization existing was not sufficient to account for the fatal termination, and in which pressure on the left bronchus existed; in two, the constriction formed was produced by enlarged bronchial glands, and in one by an aneurismal tumor. The state of the glands, to which I am anxious to draw attention by the publication of the above case, has scarcely been mentioned by authors as a cause of death; and M. Louis, who refers to the frequent occurrence of enlarged bronchial and cervical lymphatic glands in tubercular phthisis, mentions it only as a pathological fact, not appearing to regard it as an occasional cause of death. In like manner Morgagni, in his laborious production on the Seats and Causes of Diseases, repeatedly mentions the presence of enlarged bronchial glands; but in no instance do they appear to have been so increased in volume as to have pressed upon the bronchi.

Regarding the diagnosis of this state of the bronchial glands, I may remark, that I have only met with it in phthisis, and then always connected with enlarged cervical glands. The post-mortem examination of this case throws some light on the cause of pulmonary emphysema. This has been explained on different hypotheses; and one that

has been very frequently taught is, that the cells of the lungs become distended by the mechanical violence of coughing. Here, however, the cough had been but slight, often quite absent, and never violent; there was, however, constriction of the bronchus: to this, therefore, the explanation adopted by Dr. Stokes well applies. Air at each inspiration could enter the lung in greater abundance than the succeeding expiratory effort could succeed in expelling. It is true that the stricture of the bronchus would equally interfere with the entrance and escape of the air; but then it must be recollected that as the muscles subservient to inspiration are far more numerous and powerful than those of expiration, it follows, that whilst a muscular effort sufficient to draw air into the lung past the constriction could be easily accomplished, the following effort at expiration would only be sufficient to drive but a moiety of the inspired air through the flattened branches; and the result would be, what was found after death, a permanently dilated and emphysematous condition of the pulmonary cells. This hypothesis exceedingly well explains the condition of lung almost constantly met with in children who die with lungs studded with tubercles; there is almost always an emphysematous state of the cells of such lungs, sufficient indeed, as I have more than once seen, to make the diseased side the most resonant on percussion. Here the pressure of the tubercles on the bronchial ramifications produces the same effect in distending the air-cells as the pressure on the bronchus in the case above narrated. The frequent occurrence of emphysema with tubercles in the lungs of children is directly opposed to the statement of their never occurring together, on which is based an empirical mode of treating phthisis, adopted by some few practitioners, who endeavour to induce emphysema by making their patients breathe through either long curved tubes, or short ones with a valvular plug in the centre.

One other fact is taught by this case, viz. that occasionally extensive tubercular deposit may exist in the lung without any marked emaciation. It is true that this constitutes the exception to the general rule; still, as it occasionally occurs, its cause is worth inquiring into. We know that the lung

has at least a double function to perform—one to burn off carbon, and a second to convert ordinary albumen into the self-coagulating form, or fibrin, which abounds in arterial blood. To effect these changes, it is necessary that the blood, whilst circulating in the capillaries of the lung, should be exposed to the influence of the air. If, therefore, this be prevented by the deposition of tubercular matter, or by the preternatural distension of the air-cells, so that there is left a diminished surface for the capillaries to ramify upon, it would necessarily follow that much carbon would be retained in the system; and ultimately the patient may sink from the effect of a poison generated in his own body, by the narcotic effect of a highly carbonized fluid circulating through the brain. If, on the other hand, the vital powers be less exhausted—if the lung is quoad its function less impaired,—then it is probable that some portion of that carbon which, in a perfectly healthy condition of the organ, would be *burnt off*, is deposited in the adipose tissues of the body, as one of the ingredients of fat. This might be hazarded as a probable explanation of the frequent accumulation of loose fat in the person of many an old bronchitic or emphysematous patient.

RESEARCHES

ON THE

NATURE OF TUBERCLES:

BEING PART OF A PAPER READ TO THE
PROVINCIAL ASSOCIATION

BY WILLIAM ADDISON, Esq., F.L.S.

THE elements of the blood visible by the microscope, without any manipulation, are—

1st, The red corpuscles; 2d, the colourless corpuscles; 3d, molecules and granules in the interior of the colourless corpuscles; 4th, similar molecules and granules isolated in the liquor sanguinis, and independent of the corpuscles; 5th, the fibrine, which may be seen by the microscope coagulating in the form of delicate cylindrical fibres, having a diameter even less than that of the molecules.

The fibrine does not form globules or corpuscles of any kind. Molecules, granules, and colourless corpuscles,

enveloped in a net-work of fibrinous fibres or filaments, with variable quantities of entangled serum, form the entire mass of the buffy coat of the blood.

The phenomena displayed on the addition of liquor potassæ (Brandish's alkali) to the blood corpuscles are very remarkable: the first effects of the fluid are very rapid and energetic; after a short time, by following the directions given in the paper, the alkali may be observed slowly diffusing itself among the corpuscles. The red corpuscles may be seen to explode and disappear instantaneously, or to burst open gradually, and discharge their contents, and many singular changes of form may be witnessed. The colourless corpuscles may be completely and slowly dissected by a proper application of the liquor potassæ—all the stages of the process and the number and nature of their contents may be readily seen by the microscope. For this purpose, a drop of the liquor sanguinis from the surface of buffy blood is removed by the point of the finger, and transferred to a slip of glass, previous to coagulation; it should be spread out a little on the glass, and the liquor potassæ cautiously added from the point of a pen-knife or a lancet, while the corpuscles, without any covering, are under examination. This manipulation, with a little practice, may be readily accomplished with one of the small upright French microscopes, and by moving the slip of glass gradually forward, the progress of the alkali may be watched for some time. Rapid changes take place; molecules and granules are developed in the interior of the corpuscles, which enlarge by imbibition, and then dehisce or explode, the molecules and granules pouring out of them in great numbers; if the alkali be acting weakly, the molecules swell to granules, and the granules enlarge previous to their final disappearance by dissolution in the liquid.

Pus corpuscles differ in no respect from the colourless blood corpuscles, except only as they are altered in size and appearance by exhaling their own contents, or by imbibing the fluids with which they are associated. Water and the dilute acetic acid cause them to enlarge, developing the molecules and granules in their interior. The effects of the liquor potassæ upon them are

very singular and instructive. On the application of this liquid the corpuscles immediately begin to enlarge by imbibition; a great number of granules become exceedingly conspicuous within them; finally, they burst open or explode, and the granules are dispersed around.

Several cases and experiments are minutely detailed in corroboration of the foregoing statements, from which the two following are selected:—

Case of Shingles.—One of the clear transparent vesicles was opened with the point of a lancet, and a great number of colourless blood corpuscles was found by the microscope in the fluid. Many of them exactly resembled the corpuscles in the blood; others appeared a little shrivelled, and a few were remarkably large. All of them contained molecules; the large ones had several bright granules, which, on close inspection, were evidently moving within them—that is, the granules disappeared in one part of the corpuscle, and became visible in another. This was repeated several times during the observation, apparently from the working (“*writhing*”) or undulation of a fluid, which, by alternately dividing and coalescing, and then again dividing, formed the granules, which were sometimes visible at one spot, and then at another. The author has seen similar phenomena in the inner vesicle of the red corpuscles after the addition of a drop of gum water.

A little water was now added to the corpuscles from the point of a lancet; after a few minutes the shrivelled corpuscles became quite plump. Liquor potassæ was afterwards added very cautiously in the same way, and the corpuscles, one after another, dehisced. At first they gave a sudden jerk, and enlarged to twice or three times their former dimensions, displaying the granules in their interior; and then they burst open by a kind of explosion, each corpuscle discharging about twelve large granules, which were gradually dissolved.

Case of troublesome catarrh (hay-fever).—Copious discharge of clear transparent fluid from the nostrils; a perfectly limpid drop of the mucus was examined by the microscope, and I was somewhat surprised to find in it a great number of colourless corpuscles, resembling the colourless corpuscles of

the blood. There were, indeed, corpuscles of all sorts, forming a complete series, with gradual transitions, from the colourless blood corpuscles through all the forms and varieties of pus corpuscles, up to large, round, granulated corpuscles and epithelium cylinders. My astonishment was great when I found most of these corpuscles provided with vibratile cilia in the most active state, so that some of the corpuscles were actually moving about by their means; and not only were the cilia in motion, but the molecules and granules in the interior of the corpuscles were in a very active state; they could be seen rapidly shifting their position within the corpuscles.

I examined no less than six different specimens of the mucus from the same individual, and I always saw a series of similar objects.

Case of Cancer of the Breast (existing some years).—Arm œdematous; the back of the hand had been punctured some weeks ago to relieve the swelling, and a serous fluid has been discharged from it ever since. The author frequently examined this fluid by the microscope, and always found in it a fibrinous coagulum, and corpuscles resembling in every particular the colourless corpuscles of the blood, somewhat altered by shrivelling. When the arm was cool and free from pain, the fluid discharged was perfectly limpid, as colourless as spring water, but corpuscles were found in it; and after standing ten or twelve hours, a delicate but almost invisible net-work of fibrine could be drawn out of it with the point of a needle. Sometimes the arm, without any obvious cause, became much more red, swollen, and painful, and then the discharged fluid had the appearance of ordinary serum; the number of corpuscles was much increased, and the coagulum was more dense. On the addition of water the corpuscles swelled out and enlarged; with liquor potassæ they burst open, discharging large granules. From the result of this and other experiments, it is evident that the serous fluids effused in dropsies differ from the serum after venesection; they contain fibrine and corpuscles. The fluid at the surface of inflammatory blood is the liquor sanguinis, highly charged with molecules, granules, and colourless corpuscles; it is a strong solution of fibrine.* The limpid fluids

discharged by œdematous swellings are of a precisely similar nature, with a less quantity of fibrine and a less number of corpuscles; the varieties of coagulable lymph are intermediate between the two extremes.

All abnormal discharges, and all the varieties of serum and coagulable lymph, are modifications of the liquor sanguinis—stronger or weaker solutions of fibrine. All the varieties of pus and lymph corpuscles are more or less altered colourless corpuscles—altered either by imbibing and growing larger, or by exhaling, shrivelling, and becoming less. In fact, all abnormal products are effusions, and not secretions.

The foregoing experiments (here briefly stated) are brought forward to strengthen the conclusion which it is the author's object to establish—viz., that all secretions take place in the interior of granulated vesicles or cells, not by transudation from one tube (a bloodvessel) into another (a duct); consequently that "tubercles in the lungs," "tubercular infiltrations," "hepatisation," and "pus," are not secreted products, but simply the elements of the blood effused by an excessive "vital turgescence" (or inflammatory action), having their peculiar characters determined by the texture and function of the structure, and by the amount of activity of the turgescence.*

A singular fact is stated with regard to the animalcules; it may be witnessed in all of them by the application of liquor potassæ (which the author calls his dissecting fluid). It penetrates the transparent tunic composing the body of the animalcule, by imbibition, and soon causes it to burst open or explode, precisely in the same way as the colourless blood or pus corpuscle; and the so-called stomachs of the creature are forcibly discharged, or thrown out one after another, thus becoming objects for minute microscopical scrutiny. The stomachs (?) swell and burst in like manner, precisely as the granules discharged from the lymph corpuscles of the frog, or from the pus corpuscle. These stomachs the author believes to be granulated vesicles, performing their functions by imbibition, and not by assimilating or digesting food, voluntarily

* The author refers to Mr. Goodsir's paper, and corroborates his opinion with respect to secretion.

taken. The vital powers of the animalcules are totally inefficient in opposing the imbibition of the poison, and their stomachs may be seen enlarging in the interior of the body prior to the rupture of the integument.

CASE OF ENTERO-EPIPOCELE.

To the Editor of the Medical Gazette.

SIR,

IF you think the following case of strangulated entero-epiplocele worthy of a place in your journal, it is at your service.—I am, sir,

Your obedient servant,

A. SUTTON, M.R.C.S.

Congleton, Nov. 1, 1842.

— Fisher, æt. 50, married woman, the mother of twelve children, residing at Somerford in Radnor, near four miles from this place, has been the subject of femoral hernia for about five years: has never worn trusses. On Tuesday, the 19th day of October last, whilst endeavouring to lift some heavy weight from the floor of her house, felt the hernia suddenly protrude with considerable force, and on examination found it to be much larger than on any previous occasion: had been down several times, but only on one occasion had she found it necessary to call in the aid of a surgeon; herself or husband having succeeded in reducing it. On this occasion the same means were used from about five o'clock P.M., the time of the hernia protruding, until about ten P.M. without any good effect, when I was sent for, and first saw the case at eleven P.M. same day. On examination I found a considerable tumor occupying two-thirds of the space between the right os pubis and inferior spine of the ilium on same side, extending in the direction of the inferior edge of Poupart's ligament. From the attempts which had been already made to reduce the hernia, the tumor had become tender and painful on pressure. Bleeding and the warm bath were had recourse to with considerable advantage, the patient being able to bear pressure on the tumor. The taxis was now tried, and with the usual auxiliary means, enemata, &c. persisted in for nearly three hours without any advantage. Cold lotions were ordered to be applied, and ordered to be continued until my return.

Considering a second opinion advisable, I requested my friend, Mr. Molart, of this place, to visit the case with me. On our arrival about ten A.M. of the 20th, I found the patient much the same as she was when I left her at three A.M.: pulse 100, weak; stomach irritable; considerable anxiety; tumor exceedingly painful when touched; integuments covering the tumor very much inflamed, with dark-red streaks appearing on the surface in various directions. Under these circumstances Mr. M. agreed with me in considering any further attempts at reduction impracticable, and only calculated to lessen the chances of a favourable result in the event of an operation being acceded to by the patient and her family—an opinion borne out by the sequel.

On apprising the patient and her friends of the nature of the case, permission was obtained, and the operation proceeded with.

An incision was made in the direction of Poupart's ligament along the superior portion of the tumor, about three and a half inches in length, dividing the skin and adipose tissue, and laying bare the crural fascia. The inferior lip was now divided at right angles to the first incision, and the flaps dissected back. A small opening was made in the crural fascia, a director passed right and left, and the fascia divided with the scalpel the whole length of the first incision. On cutting through some more cellular tissue, fat, and one or two small glands, a second layer of fascia was divided, as in the first instance, and the sac was exposed of a deep purple colour. At this period of the operation the finger was passed down to the crural arch, which was divided by means of a probe-pointed bistoury, after which an attempt was made to return the hernia without opening the sac, which was unsuccessful. On opening the sac a large flap of omentum, enveloping a small portion of the ilium, was exposed, and, on endeavouring to return the intestine, a stricture was found at the neck of the sac, which was divided. The intestine, which was of a deep port-wine colour, with a few livid streaks interspersed, was, however, firm, and, after being released from the stricture, was returned into the abdomen. About two ounces of omentum was cut off, and the wound closed by

sutures. A piece of oiled lint was applied, and a fold of linen dipped in cold wash ordered to be placed over the wound. Some warm brandy and water was given, and the patient replaced in bed, expressing herself as perfectly relieved. Enemata were ordered to be given every fourth hour, warm fomentations to the abdomen, and in two hours after the operation Ol. Ricini ʒj.: to be repeated in the evening if the bowels should not be moved.

Same day, 7 P.M.—Pulse 90, soft; pain much easier; belly soft; stomach quiet; bowels firm.

Ol. Ricini ordered to be continued, and Mij. Ol. Croton. Sup. Sacch. Pauxill. to be taken immediately. Continue enemata.

20th, 10 A.M.—Pulse 100; stomach irritable; occasional vomiting; bowels obstinate; abdomen flaccid; no pain on pressure; wound healthy. Treatment same.

Enemata Ol. Ricini and Ol. Croton. to be repeated.

6 P.M.—Pulse 110 to 120; vomiting troublesome; stomach extremely irritable.

Cont. Medicamenta ut antea. Effervescing mixture ordered every fourth hour.

21st, 10 A.M.—Pulse 120, feeble; had a restless night; bowels still firm; stomach extremely irritable, rejecting all; hiccup; tongue slightly furred; belly soft, bears pressure; wound healthy.

Continue same treatment, and ordered calomel and opium every fourth hour in addition.

7 P.M.—Pulse 120, weak; hiccup; vomiting continues, becoming stercoraceous. Same treatment, salines, &c.

22d, 10 A.M.—Pulse 120 to 130; vomiting continues, extremely offensive; constant hiccup; great anxiety; bowels still torpid; belly soft, no pain on pressure; wound healthy.

Ordered brandy and water; continue salines, cal. and opium fomentations, &c.

Cont. Enemata with Ol. Ricini and Ol. Croton.

Did not see the patient in the evening, but received a message to say that the symptoms were the same, and the patient appeared to be getting worse. She continued in the same state, I was

informed, until near 5 A.M. the next morning, the 23d, when the bowels resumed their natural functions; copious evacuations took place, and when I visited her at ten A.M. all the unpleasant symptoms had subsided; pulse 90, soft and full; belly flaccid, no pain on pressure; wound healthy.

Continue salines only. Ordered anodynes.

24th, 10 A.M.—Patient continues doing well; had a good night; tongue clean; stomach quiet; wound healthy; complains of the purging, which has been rather severe.

Continue salines, with anodyne at night.

26th to 30th.—Convalescent; improving.

UTERINE HÆMORRHAGE, WITH RETENTION OF THE PLACENTA.

To the Editor of the Medical Gazette.

SIR,

I SOME time ago saw an article in one of the medical journals on a method of expediting delivery. I have forgotten in which publication it was, and have spent a great deal of time in looking for it, in order that I might refer to it in this communication, but have not succeeded. It was, however, to the effect that the author, in cases of protracted labour from inefficient pains, had found benefit from introducing two fingers into the vagina, and pressing against its posterior part during a pain, in imitation of the bearing down of the child's head on the perineum; and he attributed the good effects—no doubt rightly—to what is called the excitomotory function of the nerves.

I have not tried this plan previous to the birth of the child, but I have found it useful on what is, I think, a more important occasion—retention of the placenta from inaction, or insufficient action, of the uterus, especially when this is complicated with hæmorrhage. The following is an outline of one out of two or three cases:—

I attended Mrs. D. in labour about a month ago. She is the mother of a number of children, and her last four labours have been accompanied with flooding after the birth of the child. At her last previous confinement, two years ago, I was present, and the hæmorrhage between the delivery of the child and that of the placenta was

such as to cause debility, and greatly to retard her recovery. On the present occasion she was in a very weak state from an affection of the hip-joint, and, owing to the feebleness and inconstancy of the pains, the child was not expelled till a fortnight after the os uteri first began to dilate. After the birth of the child, gentle traction of the funis, and firm pressure over the region of the uterus, were made for some minutes, without inducing any uterine contraction; and as there was considerable and increasing hæmorrhage, I introduced two fingers into the vagina, and made firm and continued pressure on the perineum with them. The uterus commenced to contract the instant this pressure was applied, and the contraction continued till the placenta, together with some coagula, were expelled, when the hæmorrhage at once ceased, and the uterus remained properly contracted.

This is a very easy measure, which can be put in force in a moment, and need not interfere with any other efforts either to promote contraction of the uterus or to check hæmorrhage. I feel satisfied, however, that it may often be of service, and that it may occasionally obviate the necessity of introducing the hand into the uterus. The liability of tenesmus to induce premature labour, and the increase of uterine action from plugging the vagina, are, no doubt, physiological phenomena indetical with the one under consideration. I do not, however, propose that the above expedient should supersede the plug on any occasion where the plug is admissible.—I remain, sir,

Your obedient servant,

JOHN SNOW.

Frith Street, Soho Square,
Nov. 3, 1842.

MEDICAL GAZETTE.

Friday, November 11, 1842.

"Licet omnibus, licet etiam mili, dignitatem Artis Medicæ tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

CHOICE OF A PROFESSION.

It is said that in Hindostan the members of every caste invariably adhere to the employment followed by their forefathers. In England, though it

is natural for a parent to bring up a least one son to his own occupation, it would rarely be expedient to do the same with half a dozen; and most fathers would be grateful to the friend who should teach them the advantages of the several professions, with which they are not experimentally acquainted. Mr. Hudson has undertaken the office, and in a short manual* has furnished information for parents of various grades;—from those who can afford the sum required for a commission in the Guards, to those whose humbler ambition is satisfied with a clerkship at an auctioneer's. Nay, even the state of hackney writer is explained, though it is confessed that "this employment is a sort of *pis aller* for a young man." By hackney writers Mr. Hudson does not understand the minor retainers of literature, but certain rapid penmen who wait in the public-houses about Chancery Lane, till their services are required by the law-stationers. Mr. Hudson is impartial and clear-sighted, and has drawn a judicious sketch of his subject, which will bear enlarging with advantage. Perhaps he has not laid sufficient stress on the predisposition or fitness for particular professions, which is generally manifest in the young. It would be too bold to say *jurisconsultus nascitur, non fit*, yet it is certain that at the age when professions are chosen, this predisposition is commonly so marked as to make some employments far more eligible than others. Nor are positive disqualifications to be overlooked. A dry abrupt manner would be a most serious hindrance to a practitioner of physic, in whom are required, according to an ingenious writer, "those qualities which may serve to render him an agreeable companion: for the family physician should always be the family friend."

No one, again, would think of recom-

* The Parent's Hand-Book; or, Guide to the Choice of Professions, Employments, and Situations, &c. By J. C. Hudson. Esq. 1842.

mending the law for a lad of less than average powers of comprehension. On the other hand, if a young man shows marks of decided talent, not measured by the fond partiality of relations, but by the stern gauge of schools and universities, if he is ready with tongue and pen, and ambitious of occupying the highest places in society, what profession can equal the bar? The business of an advocate consists, in great measure, in doing for the affairs of common life, what, according to Pope, Newton did for the theory of the solar system—all was darkness before, and he made all light. To disentangle truth from the confused statements of fools, and the wilful perversions of knaves, is his especial office. And as Bacon affirms that those who are “not apt to beat over matters, and to call upon one thing to prove and illustrate another”* should study the lawyers’ cases; so to those who are already gifted with this faculty of illustration, the bar offers its immense rewards. To such a man, adorned with such varied qualifications, we may boldly say—

I, bone, quò virtus tua te vocat; i pede fausto,
Grandia laturus meritorum præmia. Quid stas?

A parent fresh to the subject would not find it easy to make out from Mr. Hudson’s book why the medical profession is so ridiculously overstocked; for he affirms, firstly, that it costs a good round sum (toward which the student cannot earn a shilling) to get into it; and, secondly, that it takes time before an income can be obtained. Mr. Hudson, however, in the course of the chapter, solves this difficult problem, which seems a contradiction in terms; for if a profession is guarded by an expensive education, and years of dull expectancy after entrance, how can it be filled to excess? Such excellent *chevaux de frise* can be cleared off by well-mounted riders.

The problem is solved by giving the details on which it is founded. In the first place, then, what is the premium for a five years’ apprenticeship? “Independently of board,” says Mr. Hudson, “which is a matter more susceptible of calculation, the fee for a London practitioner, whose practice is moderate, say £300 or £400 per annum, is about £50, and it would not be very far from the truth to calculate the fee in every case in the same proportion to the annual value of the master’s practice.”

In the case supposed, therefore, the pupil, whom we may imagine to be living under his father’s roof, and feeding on the family joint, will learn the covenanted sciences at the rate of ten pounds a year. Then come the school fees, and the two diplomas, not very formidable *chevaux de frise* either. Mr. Guthrie, indeed, in a clinical lecture lately published in the *Lancet*, talks of these expenses in a tone of exulting regret, lauding himself for having contributed to make them small, yet not altogether pleased with them for being so low.

But we would ask Mr. Hudson, or rather, those parents whom he addresses, whether it is worth while to bind a son to a practitioner whose income is only £300 or £400 a year; and thus devote him, for at least three precious irrevocable years, to the slight opportunities of pharmacy afforded by so small a practice?

We think with Mr. Hudson that the acquirement of “a neat dispensing hand” is desirable: but this should be aimed at with a practitioner of many patients; or, better still, in a chemist’s shop.

Five years ago we gave the statistics of plucking at Apothecaries’ Hall, with a commentary*. Some pupils, as we there showed, are rejected from ignorance of anatomy, others from unacquaintance with the materia

* Essays. Of Studies.

* MED. GAZETTE, August, 5, 1837, p. 693-5.

medica; still more from a combined ignorance of several subjects. Of 106 plucked in one year, 36 were sent back solely on account of their ignorance of Latin. Not a few were unable to translate a single prescription; and, in short, every variety of defect was found within the limits of the subjects which form the curriculum of the Society. But we never learned, either from public record or private conversation, that Greek and Dynamics were among the topics of examination at Blackfriars; and we therefore think that Mr. Hudson frightens our budding practitioners needlessly, in what he says on this part of the subject.

It is a common thing in books of physiology to mention the force with which the heart circulates the blood, and the inquiry, "how great is the force stated to be," might be called a question in dynamics. So be it. But as to construing Greek, we suspect that many who pass a very creditable examination at the Hall would be sorely perplexed to know whether a Greek book was turned upside down or not.

It is generally stipulated, says Mr. Hudson, that during the fourth and fifth years of his apprenticeship the pupil shall be at liberty to attend lectures &c., All prudent parents, we think, will do well to stipulate that their sons be allowed to study their profession during a much longer period; as two years are insufficient to gallop through the lectures required by the Hall alone.

We agree with the author in his warning against those schools whose sole recommendation is their cheapness; but we cannot assent to his proposal, that the student should select a school for himself, by collating the advertisements which appear in the London papers during the month of September. If the recommendation could be followed, we should rather say, choose

a school as you would a tailor, or a wine-merchant, among those who do not advertise; but, alas! they are all tarred with the same brush, they all advertise! The only resource, therefore is, the advice of an honest and well-informed friend.

"There is no profession," says Mr. Hudson, "in which it is so difficult to make a beginning as in that of medicine; and there is too much truth in the vulgar saying, that by the time when a physician earns bread and cheese he has no longer any teeth to eat them with."

The same thing is popularly asserted of the Law. Yet as every young barrister is indulged with a brief or two during his first circuits, it is equally true that every physician or surgeon is entrusted with cases during his early years of practice. But to turn these exploratory fees rapidly into a handsome income is given only to the few men of talent *quos Jupiter aquas amavit*. If the beginner, however, sets up as a general practitioner, Mr. Hudson divides the problem into two cases. He first imagines him to have a private house, with a coloured lamp over his door, and believes it probable that twelve months will elapse before any body will put his services in requisition. So entire a lack of practice must assuredly be rare; and presupposes a want of that confidence which he ought naturally to have conciliated during his years of study.

Of course we coincide with Mr. Hudson in the opinion that an open shop is a more immediate road to practice. When such a shop, in a populous neighbourhood, is tenanted by a man of genial manners, the difficulty of making a beginning vanishes; and when we join this truth with the other fact of the £50 apprenticeship fee, we begin to see why the profession is overpeopled; a painful certainty, which,

under Mr. Hudson's original theory, was quite inexplicable. As for buying a practice, this is not quite so good as it seems; for "the new man will sometimes find that the patients have capriciously decided to transfer their troubles to the care of another."

"Capriciously," forsooth! To us the oddity is, that so many British freemen can consent to be bought and sold after this fashion. Do not they know that they are transferred to the new leech on the strength of the goodness of his draughts—not those in phials, but those on bankers?

On the whole, Mr. Hudson has pleased us much with his sketch, and we wish every success to his laudable endeavour to diffuse the important facts which form its basis:—

To know
That which before us lies in daily life
Is the prime wisdom.

BRITISH MEDICAL ASSOCIATION.

THE Sixth Anniversary Meeting of this Association took place on the evening of Tuesday, the 8th, at the British Coffee House, when the following address was delivered by R. D. GRAINGER, Esq.

GENTLEMEN,—The great object which this Association has with so much perseverance exerted itself to accomplish, has been so ably discussed, and so repeatedly considered in all its bearings, by several of the most distinguished members of our profession, that I have little hope either of extending your acquaintance with a subject with which those I have the honour of addressing are already so familiar, or of adducing arguments which possess the charm of novelty. Notwithstanding this, the present is so eventful a moment in the history of medical reform, that every individual, who is really desirous of securing the triumph of that important question, is bound to contribute his assistance, however trifling it may be, to advance the cause we all profess to advocate.

From the experience of the last session of Parliament, there can be little doubt that in the ensuing one the Government will bring forward some measures bearing upon the interests of the profession; and it may be reasonably supposed that the character of the changes proposed will very much depend upon the conduct pursued by the great body of medical practitioners. It is one among

the many evils requiring correction, that there is no acknowledged and legally-constituted body through which the legislature of the country can be made acquainted with the real deficiencies in the existing medical institutions, nor with the grievances of which the vast majority of our professional brethren have so long and repeatedly complained. In the absence of such a representative body, the duty of enlightening the legislature and the government has devolved on the various medical associations; and it is earnestly to be hoped that now, when the great problem which has engrossed so much of the attention of the profession is apparently approaching its solution, a combined and strenuous effort will be made in order that the exertions of so many years may not be rendered nugatory. In the observations which I have to offer it will be desirable to consider the question of medical reform in three points of view:—

1st. As it regards the education of the student.

2d. As it regards the rights of the practitioner.

And, lastly, as it concerns the public.

And, first, with respect to education, I may remark that this is a subject which has always been a prominent object of interest to this and other associations. Indeed, if we refer to the records of what has taken place since the subject of medical reform has been actively discussed, we shall find that individuals of all shades of opinion have united in the earnest expression of a desire to raise the standard of education to the highest point which may be found to be consistent with providing a sufficient number of well-instructed and enlightened practitioners for the wants of the country. That this is a desideratum yet to be attained, will, I believe, be doubted by few of those whose attention has been directed to the subject. I freely admit, what indeed has been universally conceded, that the Apothecaries' Company have made most successful efforts to promote this essential object, and that to the successive extension of their *curriculum* very large part of the advance made by the profession at large, in scientific knowledge, is attributable. As it is through the medium of this body that the great majority of practitioners enter the profession, its character and operations become objects of moment. Without indulging in any personal allusions, it is necessary to point out distinctly that neither the constitution of the examining board, nor the powers under which it acts, are calculated to realise what the spirit of the age demands. It is not becoming that the most important affair connected with a liberal profession should be entrusted to a trading company, nor that the only act of Parliament regulating medical education should compel a man of

science to commence his career as if he were entering upon a mere handicraft occupation, by a lengthened apprenticeship. The clause enforcing this apprenticeship of five years has been, in the estimation of those best qualified to form an opinion, the great barrier to the scientific education of the medical student in this country, and until it is entirely effaced from the statute book, all attempts to effect improvement in this way will be vain. It is, for instance, mainly owing to this clause that young men enter the profession at so early an age that there is not sufficient time for that preliminary education, the want of which has been so generally lamented. It is true, indeed, that the Court of Examiners, perceiving the evils of their own regulations, have recommended the student to devote a part of the period allotted to the apprenticeship, to the attendance on lectures, &c. ; but to my certain knowledge, in a great number of instances, this advice, from ignorance or other causes, is not followed. Repeated cases have been stated to me of young men having been occupied during the whole five years in the mere business of dispensing.

The apprenticeship clause is not only objectionable, for the reasons just stated, but it inflicts, as it appears to me, another and a more serious injustice upon the student, from which, it is to be hoped, he will be speedily relieved. The Court of Examiners, by extending the period of attendance upon lectures and hospital practice to three winters and two summers, without previously obtaining from the legislature a repeal of the apprenticeship clause, have virtually, in a great number of instances, compelled the pupil to be engaged eight years in the profession before he could obtain the license to practise. Now, when it is considered that four years is the longest period of study required in the most celebrated universities in Europe preparatory to taking the degree of doctor of medicine, the injustice of compelling the English student to devote twice that time in order to become a mere licentiate of a City company, is rendered conspicuous. When such a demand is made on the time and purse of a student, he has a just claim to the distinction which a degree would confer; and that such distinctions are eagerly sought after, is proved by the large number of young men who seek to acquire the diploma of the University of London. Last year as many as 80 students presented themselves for examination; and as the degree confers no legal title as to practice, it is clear, what my individual experience confirms, that the main inducement was the honour of belonging to a liberal and learned body. I know no circumstance more honourable to our profession than this fact, which in itself speaks volumes as to the want of a Faculty of Medicine in this metropolis. As it is, there is at present every thing to

discourage the noble aspirations after academic honours which clearly actuate a large number of the rising members of our profession; so that instead of finding the fostering care of a liberal institution to cheer him onward in the toilsome path by which alone scientific distinction is to be attained, the English student must make his way under every discouragement, and not only have his attention distracted by preparing for two or three separate examinations, but must incur an extra payment, which always presses hard on his limited resources, and but too often acts as an insurmountable barrier to the attainment of the honourable and legitimate object of his ambition.

I have been induced to dwell upon some of the evils affecting our junior brethren, because, from the nature of my pursuits, I have for many years witnessed the injustice under which they have suffered, and because, in the various pamphlets and addresses to which the subject of medical reform has given rise, this branch of the question has not received all the attention it merits.

So much has been written and said, touching the grievances of the general body of practitioners, whether surgeons or physicians, that I will only engage your attention a few moments whilst I point to a few of the more prominent causes of complaint. The whole of these may be distinctly traced to the indifference evinced by the governing bodies to the feelings and welfare of their members. The very circumstance of our meeting this evening, and the institution of so many associations throughout the empire, is a proof that those who have been invested with power for the protection of the profession, and for the advancement of medical science, have not faithfully discharged their trust; for the members of an active profession, whose incessant pursuits leave them but little leisure to engage in other matters, would not have devoted so much of their time and attention to the subject of medical reform, if they had not felt it to be an act of public duty thus to step out of their ordinary occupations, in order to rectify abuses from which both they and the community are the sufferers.

The complaints of the general members of the profession may be referred to two classes—one concerning privileges, the other respecting positive right.

The experience of the few last years has shown that a very general and growing feeling of dissatisfaction exists in the profession respecting the manner in which the Colleges of Physicians and Surgeons have exercised their powers; and when we recollect that the great body of members have been, and continue to be, pertinaciously excluded from all participation, both in the honours of the profession and the manage-

ment of its affairs, it requires but little insight into the springs of human action to perceive that so long as a system which is thus repugnant to every feeling of self-respect is persisted in, there never can be, and, what is more, there never ought to be, a cessation from every fair and legitimate means of opposition. Some persons may indeed consider these questions as unworthy the notice of scientific men; but we do not find that in other professions there is any indifference to such matters: the titles, dignities, and power attached to them, being considered as fair and honourable objects of ambition.

In the case of the College of Surgeons there is an additional and most just cause of complaint, that the ground of disqualification is made to infer a positive inferiority on the part of those excluded; the vast majority of English practitioners being represented to the public as forming a lower grade of the profession. In the scheme of reform lately brought forward by the Council of the College of Surgeons, it is understood that the same principle, which has hitherto been acted on by that body, was still recognized. Assuming this to be the case, it may be desirable to pause for a moment, and inquire what that principle is, which is thus so tenaciously retained. It is, as far as I understand, this—that the practice of medicine (as contra-distinguished from that of surgery) or of midwifery, disqualifies the individual so practising from all participation, even the most insignificant, in the honours or management of the affairs of the College. Now, gentlemen, I do not hesitate to say that no proposition could be conceived more injurious to the real interest of surgical science, than this attempt to perpetuate that distinction between medicine and surgery, which the unanimous voice of the profession has declared to be equally detrimental to the interests of both.

It is the highest glory of modern surgery, that, by medical treatment, the necessity of operations has been obviated in a vast number of cases, in which formerly the only hope of relief was in a painful mutilation; and all those who are anxious to alleviate the sufferings of our race would assuredly exert their power to encourage the practitioner of surgery to persevere in the same direction: least of all would they wish to see a retrograde movement, sanctioned by the authorities that be, towards the principles of those dark ages when medicine and surgery were divided between the monks and their barbers. At a time when all classes of medical men are, from conviction, agreed that there should be an uniform education for the surgeon and the physician, it is apparent that a plan which would disfranchise the great body of practitioners, and place the elective power in the hands of about two hundred of what

are called pure surgeons, would only tend to perpetuate those dissensions in the profession, which are, I believe, entirely attributable to misgovernment. It has always appeared to me a most difficult thing to comprehend how a body of honourable and distinguished men should ever support a system which deprives so many of their professional brethren of those privileges to which their education and scientific attainments so fairly entitle them; and still more, how this exclusion can tend to promote, as it has been asserted it does, the standing and respectability of the profession. I confess that, in my opinion, it would contribute much more to revive the honour and influence of the medical body in the estimation of the community, if, instead of the invidious conduct it has been our lot to witness and lament, the existing corporations had exerted the great influence they possess, to raise the standard of education, to protect the just rights of their members, and, specially, to cut from their number, as they would a tainted spot, those selfish empirics who only avail themselves of the title of an honourable profession to effect, with more deadly certainty, their unhallowed pursuits.

That the public rights of the great body of the profession are, at this time, almost entirely neglected, is proverbial. As I shall immediately have occasion to refer to the subject of illegal practice, I will in this place only adduce the treatment experienced by the general practitioner under the New Poor Law, in support of the above position. It is difficult to conceive that, if the Colleges of Physicians and Surgeons had publicly interfered when that measure was before the legislature, the obnoxious mode of appointing and remunerating the medical officers could ever have been put into operation. Even when the general attention of the profession had been called to the subject, we heard of no public remonstrances from the constituted medical authorities; and it was, I believe, mainly owing to the parliamentary inquiry, for which the profession is indebted to Mr. Wakley, and seconded by the reiterated remonstrances of this and other associations, that those ameliorations were effected, by which the rights of the medical practitioner and the claims of the poor have, to a certain extent, been established. It is the opinion of several gentlemen, who have paid great attention to this subject, that the Union districts are still too large; and I think that no true reformer can approve of the alteration which, in many cases, will enable the appointment of medical attendants to be for life. It would, in all probability, tend to a more active discharge of the duties of that important office, if the election took place every every three or four years.

In attending to the interest which the

public have in the question we are this evening met to consider, it would be superfluous in this room to adduce any argument to show how immediately the welfare of the community is affected by the degree of education which the medical practitioner receives; nor need I pause to point out that exactly in the ratio as the latter becomes enlightened does his power of dispensing good medicine increase. It may, then, be assumed that the highest interests of society are implicated in all that relates to raising the standard of professional education; and it is this consideration more especially which ought to induce the government of the country to take this all-important question under its immediate and earnest notice.

But the public are also affected in another great principle embodied in every comprehensive scheme of reform—the suppression, namely, of illegal practice. To expect, by any legislative enactment, entirely to suppress quackery, is, I believe, a vain anticipation; so long as there are knaves and fools in the world, will there be professions of cure by ignorant pretenders. Indeed, when we consider how numerous is still the class of incurable diseases, and the occasional success which attends bold and empirical practice, however much we may lament the fact, we can scarcely be surprised that, when science can hold out no hope of relief, the sufferer should sometimes catch at the confident promises of the undaunted quack. Knowing the strong feelings of the profession on this subject, I am dissident as to the correctness of my own judgment, but I certainly agree with those who, like my esteemed friend Dr. Hodgkin, think that all that can be effected by legal enactment is, in the first place to prevent the empiric assuming any title which he has not really obtained, so that he shall be compelled to write himself down a quack; and, secondly, he should be punished as for a misdemeanor, whenever his ignorance leads him into injurious mistakes, either of commission or omission. At the present time, however, no attempt whatever seems to be made to repress illegal practice; so that the empiric has a clear field before him. The only body which pretends to interfere is the Apothecaries' Company; and they, of late, appear to have abandoned this part of their duty as a hopeless affair; so that, unless some speedy and effectual change be introduced, there is great reason to fear that we shall lapse again into the state of the profession prior to the act of 1815.

I need add nothing to what has been already so repeatedly enforced respecting the great public advantage of a Board of Health, the want of which has been lately most strikingly illustrated in the interesting and able report of Mr. Chadwick on the

sanitary condition of the labouring population.

In conclusion, I may perhaps be allowed to occupy your attention a few moments, while I allude to some of the more important alterations which have been suggested in order to rectify the existing evils.

Those who have advocated the reform of the profession have been frequently blamed, by members of parliament and others, that although they had so much of which to complain, they were not agreed among themselves as to the nature and extent of the remedies required. I believe, however, that although there are some differences of opinion, they do not relate to what appear to be the essential points, upon which the great body of the profession are agreed.

The first great principle, which has commanded almost universal assent, is the incorporation of all legally qualified members of the profession. This principle was fully recognised by the delegates who met in London in 1841.

A second and equally important principle has been universally adopted by all parties in the profession, namely, that the education of every person proposing to become a medical practitioner, whether surgeon or physician, should be uniform, and carried to the highest point consistent with supplying the wants of the public.

A third principle, which may, I think, be regarded as essential to the ultimate success of all improvement, is that of the representative system—the governing body being elected by the legally qualified members. There is no doubt that this is one of the points upon which much difference of opinion will arise, and which will, in all probability, be opposed by the Government. When the important duties which would devolve on the Governing Council are considered, and especially when it is recollected that the interest of the community would, in various ways, be implicated in the decisions of that body, it is neither to be expected nor wished that the Government should not have some control over its proceedings. The addition of a certain number of non-professional individuals to be appointed by the Government would be one obvious means of meeting the difficulty: another, and, I think, more satisfactory plan, would be to render the sanction of the Secretary of State for the Home Department necessary to all the regulations of the Council which, in the opinion of that officer, concern the interests of the public. To such a constitutional control, for virtually it would be that of Parliament, there could be no reasonable objection.

The duties of a Council thus to be appointed would be to make the necessary arrangements, which should be uniform in the three kingdoms, for examining all persons

desirous of obtaining a license to practise, to determine the extent and mode of education of the student, and to act as a board of health. In any general plan of improvement, it is earnestly to be hoped—that those entrusted with the responsible office of dispensing medicines—the druggists and chemists, namely, should be required to pass an examination touching their knowledge of the properties of drugs, chemistry, and so forth.

The question which has been, and will be, most warmly discussed, is, how far the institution of such a faculty would interfere with the interest of existing institutions. As, according to the plan most generally approved, the body above contemplated would only grant a license to practise, there is every reason to suppose, from past experience, that a large number of the licentiates would still apply to the College of Physicians and Surgeons for their diplomas, and that thus the funds of those institutions would be kept up as far as would be required for all useful purposes: if, however, there should be any deficiency, it might be removed by a grant from the general funds of the faculty. Whatever plan of reform may be adopted, it is earnestly to be hoped that there may be honorary distinctions as a reward for high scientific acquirements. I do not believe that the dissatisfaction which prevails respecting the present inequalities in the profession, relates, generally speaking, to the differences themselves, but to the exclusive and objectionable principle upon which they are made to depend. If the honours of the profession were open to all who chose by their own exertions to obtain them, I do not see on what possible grounds an objection could be raised against them. It would indeed, in my opinion, augur badly for the elevation of the profession, as a learned and scientific body, if all were to be reduced to the level of mediocrity; the great object, on the contrary, should be, by judicious encouragement, to induce as many as possible of the junior members of the profession to take the highest possible degree.

But to render this plan unobjectionable and equitable, it would be quite indispensable that the present corporations should be placed upon a liberal footing, the respective members of each having a control in their government. The institution of a faculty like that contemplated, would, in fact, require such an alteration, as without it there could not be that harmony and mutual confidence which would be so essential to the successful working of the whole scheme.

In devising any new plan for the government of so important and numerous a body as the medical profession, it is clearly impossible to foresee all the results which may flow from such an extensive change, or to say that some existing interests may not be

affected; but the published proceedings and opinions of those who advocate reform, show that there is every desire on their part to preserve, as far as may be feasible, the powers and funds of the various Colleges and Universities. Let us, then, hope, that there may be sufficient public spirit among the existing corporations to induce them to sacrifice, as far as may be necessary, their own peculiar privileges, to the public good, and that we may see all the branches of our common profession continuing to elevate it in dignity, and to extend it in utility. But if this may not be, let all who are sincere in their professions as reformers steadily persevere, in the full conviction that what they seek being in itself both reasonable and just, must ultimately succeed; for, to conclude with the words of one of the most distinguished members of our profession, Sir James Clark, we may confidently affirm that “such a union of the whole profession as is here advocated must come; it is irresistible, because it is the only reform which is consistent with the natural order of things, that is founded on justice, or can place the medical profession, as a body, in the position which it ought to hold among the other liberal professions.”

ROYAL MEDICAL & CHIRURGICAL SOCIETY.

November 8, 1842.

DR. WILLIAMS, THE PRESIDENT,
IN THE CHAIR.

THE first meeting of the season was held on Tuesday evening last, when there was a very full muster of the profession,—indeed, the large library was literally crammed with the Fellows and their friends. During the recess, considerable improvements have taken place in the arrangements of the rooms, which are now much more convenient than formerly, and they really form a very excellent suite, as a door has recently been made from the anteroom into the council chamber, where tea and coffee are served after the meetings; whereby the crowding and inconveniences often felt during last season are now greatly obviated. The portrait presented to the society by the widow of the late Dr. Yelloly, the founder of this learned corporation, has been placed over the president's chair; and it forms not only an elegant but a most appropriate ornament to the library. Altogether, the *locale* of the society has now assumed rather a brilliant appearance.

The only paper read was a

*Case of Paralysis without Loss of Sensation,
from Disease of the Cervical Medulla.*

By JOHN WEBSTER, M.D. &c.

As considerable attention has recently

been directed to affections of the nervous system, especially since the important discoveries of Sir Charles Bell and other physiologists have thrown much light on these intricate questions, any new facts must always possess interest, even if they should not clear up some of the difficulties embarrassing the subject. With the view, therefore, of contributing to this desirable end, the author begged leave to bring before the society the following interesting case of a gentleman who had been his patient for several years:—

W. H. G., Esq., æt. 36. — In 1836, Mr. G. had a phagedenic ulcer of the left leg, which got well after some months; but it again broke out in 1839, when he had also a large chronic ulcer on the posterior pharynx of some duration, but not of a syphilitic character. He had pains in the head, with very costive bowels, during the greater part of the year 1839; in January, 1840, epileptic attacks, with very slow pulse, now supervened; and in the spring following, Mr. G. had spasmodic contractions of the lower limbs, accompanied by a sense of weakness in the back; and latterly he lost the use of his legs, and ultimately the entire control over every muscle situated lower than the neck. During the last twelve months of the patient's life, the whole body was paralysed, excepting the head, neck, and diaphragm, by which breathing was entirely carried on, and not by the muscles of the chest. However, sensation remained perfectly natural throughout the entire surface of the body; and towards the termination of the disease, the patient's feelings were even more acute than usual, and he could always tell, on the slightest touch of a bystander's finger, the exact spot to which it was applied. Severe spasmodic twitchings of the legs and arms were now more frequently noticed than before, and these were sometimes so violent as almost to throw the patient off his couch. The extremities were often very cold, but occasionally they felt also burning hot, with a sensation of excessive coldness in the epigastrium. The urine was drawn off by the catheter for many months, but latterly it passed involuntarily, as the feces did likewise. All the symptoms continued unabated in violence to the last, and the patient died in July 1842, but retaining his intellectual faculties perfect until the last.

Treatment.—Medicine had very little influence in arresting the disease, although the treatment may have relieved the severity of some of the symptoms. The remedies consisted principally of purgatives, mercury, sarsaparilla, hydriodate of potassa, strichnia, and morphia to procure sleep or allay spasm. Other means were also used, but the treatment which

appeared to produce the most benefit was active purging, and the tincture of cantharidis taken as a diuretic; at the same time that a copious discharge was kept up for many months consecutively from two large issues on the nape of the neck.

Autopsy.—Nothing particular was found in the head, excepting that the arachnoid membrane over the pons varolii adhered to the parietal layer of that tissue, and about two ounces of serum were found in the ventricles; but there was no tumor or change of structure either in the brain or in the cerebellum. The thoracic and abdominal viscera were healthy, with the exception of the bladder, which was much contracted in size, thickened in its coats, whilst the omentum, and some of the small intestines, adhered to its surface. On opening the spinal canal, the theca, corresponding to the three or four lower cervical vertebrae, was much distended; the arachnoid cavity was filled with lymph, and there were adhesions of the membranes to the chord, which appeared firmer at the anterior than at the posterior portion, and the parts were inseparable. The chord itself was longer than usual at this particular point, felt soft and pulpy to the touch, and on being divided it was found to be in an almost diffuent state, infiltrated with serum, but of a natural colour. For the extent of half an inch above this point the chord exhibited a dusky red colour, but there was no difference observable betwixt the two columns, both being alike softened and discoloured; the parts above and below being perfectly healthy, and of a natural appearance.

A very interesting discussion ensued upon the reading of the above paper, in which Mr. Shaw, Mr. Arnott, Dr. Williams, Mr. B. Cooper, Mr. Rawlins, Dr. Weatherhead, Mr. Coulson, the author, and some others, joined, but our limited time and space prevent us from giving any report, however much some of the observations made during the evening deserve to be recorded.

UNIVERSITY OF LONDON.

BACHELOR OF MEDICINE.—SECOND EXAMINATION, 1842.

Nov. 7.—Morning, 10 to 1.

Physiology.

Examiner, Professor T. RYMER JONES.

1. Describe the mechanical, chemical, and vital properties of Muscular Fibre.

2. What are the propelling agents employed in effecting the circulation of the blood during its passage through the venous system?

3. Describe the circulatory and respiratory organs of a Crustacean (*e. g. Lobster*), and of an insect; and point out the principal differences between them.

4. Describe the structure of the stomach of a ruminant quadruped and the process of rumination.

5. Describe the minute structure of the liver of a mammiferous animal, and the nature of the biliary secretion.

6. Describe the structure of the compound eye of an insect.

Nov. 7.—Afternoon, 3 to 6.

General Pathology. General Therapeutics and Hygiene.

Examiners, Dr. BILLING and Dr. TWEEDIE.

1. Describe the local phenomena of inflammation, or the changes which take place in an inflamed part. Give an outline of the essential nature of inflammation.

2. State the indications to be kept in view in the treatment of dropsy.

3. Describe the specific effects of the emanations arising from stagnant water on the human body; and mention the measures best calculated to counteract their pernicious influence.

4. Translate the following passage into English:—

At vomitus, ut in secundâ quoque valetudine sæpè necessarius biliosis est, sic etiam in his morbis, quos bilis concitavit. Ergo omnibus, qui ante febres horrore et tremore vexantur; omnibus, qui cholera laborant; omnibus etiam cum quâdam hilaritate insanientibus; et comitiali quoque morbo oppressis, necessarius est. Sed si acutus morbus est, sicut in cholera; si febris est, ut inter horrores, asperioribus medicamentis opus non est; sicut in dejectionibus quoque suprâ dictum est: satisque est, ea vomitus causâ sumi, quæ sanis quoque sumenda esse proposui. At ubi longi valentesque morbi sine febre sunt, ut comitiales, ut insania, veratro quoque albo utendum est. Id neque hieme neque æstate rectè datur; optimè, verè; tolerabiliter, autumno. Quisquid daturus erit, id agere antè debet, ut accepturi corpus humidius sit. Illud scire oportet, omne ejusmodi medicamentum, quod potui datur, non semper ægris prodesse, semper sanis nocere.—*Celsus*, lib. ii. cap. xiii.

Tuesday, November 8.—Morning 10 to 1.

Surgery.

Examiners, Mr. BACOT and Sir STEPHEN HAMMICK.

1. How would you dress, place in position, and subsequently treat, an extensively incised wound of the integuments and muscles, on the anterior middle third of the thigh? How does such treatment differ from

that you would pursue in a lacerated, in a contused, in a deep-punctured bayonet-wound of the same part? Give your reasons for the management of each respectively.

2. What are the symptoms and appearances in an acute inflammation of the Integuments of the lower extremity which would induce you to think that it would either terminate in resolution, in suppuration, in ulceration, or in mortification? State the foundation for such opinion.

3. Describe the various dislocations of the Elbow-joint, how they are detected, the appearances of the limb, and the mode of reduction.

4. In an amputation of the Leg, supposing you had the choice of the whole space between the knee and ankle-joints, whereabouts would you begin your incision? Give your reasons for such preference: then detail the instruments and dressing you are likely to require, describing every step of your operation; the position of yourself and patient whether it be a right or a left limb; the stoppage of the circulation, whether by tourniquet or otherwise; the incisions; the mode of using a retractor; the sawing of the bones; the securing the arteries, whether by tenaculum or forceps; or if you should require the needle, how it is to be used; the restraining bloody oozing from the cut surface in debilitated constitutions; the dressing of the stump; position in bed; time of renewal of the dressings; the removal of ligatures; and subsequent management of the patient.

Nov. 8.—Afternoon, 3 to 6.

Medicine.

Examiners, Dr. BILLING and Dr. TWEEDIE.

1. Describe the symptoms, anatomical characters, and treatment, of acute hydrocephalus.

2. Enumerate the principal varieties observed in the expectoration in pulmonary diseases, and the diagnostic inferences to be drawn from each.

3. Detail the principles of treatment in infantile convulsions.

4. State the characteristic appearances and varieties of Rupia.

5. Explain how Pneumo-thorax may arise. Give its physical signs. How is it to be treated?

6. Describe the symptoms and morbid appearances in dysentery. Give an outline of the treatment.

November 9.—Morning, 10 to 1.

Midwifery.

Examiner, Dr. RIGBY.

1. Enumerate the changes in the female breast which are produced by pregnancy.

2. Enumerate the different varieties of extra-uterine pregnancy; their duration and probable mode of termination.

3. At what period of pregnancy is premature expulsion of the fetus least dangerous, and at what period is it most so? Explain the reason why.

4. Enumerate the injurious effects which may result from hurrying the expulsion of the child.

5. Enumerate the indications for applying the forceps and for turning.

6. Define the operation of artificial premature labour, and describe the mode of inducing it as recommended by modern authors.

7. What are the injurious effects as regards the mother and child in allowing difficult labour, from contracted pelvis, to go on too long without assistance?

8. What is the diagnosis between prolapsus and polypos uteri?

November 9.—Afternoon, 3 to 6.

Forensic Medicine.

Examiners, Prof. DANIELL, Dr. PEREIRA, and Dr. RIGBY.

1. What are the advantages of Marsh's process for the detection of arsenic? and what are the sources of error to be guarded against?

2. How would you proceed to test for corrosive sublimate in the contents of a stomach, in a case of suspected poisoning?

3. What are the symptoms and most appropriate treatment of poisoning by oxalic acid? What is the average period of death after the ingestion of large doses of this poison? Describe the post-mortem appearances, and state how you would detect the presence of the poison in the contents of the stomach, after the appropriate antidote had been administered.

4. What are the symptoms and appropriate treatment of poisoning by *Aconitum Napellus*?

5. In the unimpregnated and in the pregnant state, what are the proofs of pregnancy having previously existed?

6. What are the appearances which indicate recent delivery, as shown during life and after death?

the kingdom. Besides giving the number of deaths (and the causes of them), registered during the 13 weeks previous to the 30th of September, it also gives the average of deaths in the same quarter of the four preceding years, and so shows the general and local increase or decrease in the mortality.

The total number of deaths registered during the quarter for those 114 principal districts (there are 447 registrars for all the country) is 39,069, out of a population of 6,534,535. Exclusive of the metropolis, the number of deaths is 28,950, out of a population of 4,663,808.

The number registered in the metropolis during the quarter was 11,019, out of a population (June, 1841) of 1,870,727.

As compared with the average number of deaths in the same quarter of the four preceding years, 1838, 1839, 1840, and 1841, there is an increase in the past quarter of no fewer than 2,474 deaths, the average for those four years having been 36,595, while the deaths in the past quarter have been, as above stated, 39,069. This includes the metropolis, where, however, there were two deaths in the past quarter less than the average of the four preceding years; so that the increase of 2,474 deaths is to be accounted for in the country. The increase of population, however, has to be taken into account, as reducing the proportionate increase of deaths. The population increases in the town districts about 174 annually, which would reduce the average of deaths applicable to the summer of 1842 from 39,069 to 38,208, or 861 deaths less than those actually recorded. Still, this would leave an increase of deaths upon the quarter of no less than 1,613.

The deaths registered for the 114 districts in the first quarter of the present year amounted to 44,479. In the second (or spring) quarter they were 38,190. Thus there were 879 more deaths in what is called the summer quarter (ending September 30) than there were in the spring quarter.

The mortality was 2 per cent. greater than the summer average, which is at the rate of 23 deaths annually in a population of 1,000. In the last summer quarter, ending September the 30th, the mortality was at the rate of 23.4 annually in 1,000—namely, 23.0 in the metropolitan districts, and 23.6 in the provincial towns.

The following are some of the towns in which the most remarkable increase of deaths has taken place:—In Brighton 310, or 70 above the average (240) of four former years; Plymouth 343, or 178 upon 165; Redruth 288, or 77 upon 201; Penzance 283, or 84 upon 199; Clifton 426, or 115 upon 311; Cheltenham 259, or 79 upon 180; Liverpool 1,956, or 158 upon 1,798; Tynemouth 360, or 80 upon 280. The

MORTALITY IN ENGLAND AND WALES.

THE quarterly table of the mortality in 114 of the principal districts of England and Wales has just been published. It embraces nearly all the large towns as well as the more rural districts, and therefore affords a fair criterion of the rate of mortality throughout

undermentioned towns in the manufacturing districts present the following results:—In Kidderminster the number of deaths in the last quarter was 172, an increase of 63 upon 109, the average of former years: Dudley 568, or 147 upon 421; Walsall 243, or 91 upon 152; Wolverhampton 508, or 87 upon 421; Nottingham 429, or 79 upon 350; Preston 482, or 73 upon 409; Chorlton 679, or 214 upon 465; Manchester 1,614, or 191 upon 1,423; Bradford 820, or 115 upon 705; Leeds, 1,133, or 114 upon 1,019. At Rochdale, Sheffield, Huddersfield, Merthyr Tydvil, Newtown, and Wrexham, the deaths were much under the average of the four preceding years.

The registrars almost universally attribute the increase of deaths to the prevalence of scarlatina and bowel complaints, in which they include diarrhoea and cholera. The children have been the chief sufferers. In St. Anne's, Nottingham, out of the 133 deaths registered, 52 were of children under one year of age. At Chorlton 28 children died of diarrhoea, of whom 23 were children of the working classes. It is amongst the working classes, the registrar says, that the disease has been most fatal. The increased mortality at Brighton has been chiefly amongst young children.

In the metropolis, as has been said, the deaths from all causes exhibit a decrease of 2 on the average of former years. The decrease of deaths from epidemic, endemic, and contagious disorders, has been 251. Deaths from small-pox exhibit a decrease of 251; from typhus, of 153. On the other hand, there is an increase of 260 from diarrhoea (total from this disease 477), and from cholera of 74. In other respects, the return from the metropolis presents no striking features.—*Times*.

LAWS RELATIVE TO INSANITY IN FRANCE.

By the act of 30th June, 1838, each department is obliged to provide a public establishment, especially destined for the reception and treatment of lunatic patients belonging to the district; or to arrange, under the sanction of the Minister of the Interior, with a public or private asylum in the same or a neighbouring department, to receive their insane paupers; and it is permitted, in certain cases, to appropriate a separate division, in civil hospitals, for lunatics, provided there is sufficient accommodation for not less than fifty patients. As every lunatic establishment is placed under the direction of the Préfet of the department, the President of the Tribunal, the King's Procureur, the Judge of the Peace, and the

Mayor of the Commune, and as they must be visited by the King's Procureur of the Arrondissement at least every six months (in addition to the visits made by the Préfet, and the other official persons delegated by him, or the Minister of the Interior, for that purpose), there is some guarantee that they will be properly conducted; but besides these regulations, before an establishment can be opened for the admission of insane patients, all rules for their internal administration must be approved by the minister before they can be put in force. By another clause of the same act, it is expressly forbidden for any person to establish, or even to superintend a private insane asylum, without the authorization of Government; and in such cases it is also enacted, that every house, intended for the reception of lunatic patients, must be entirely separate from any private establishment receiving inmates affected with other diseases; and the King's Procureur of the Arrondissement must visit all the private asylums in the district, at least once every three months, at undetermined periods. According to the King's ordonnance of the 18th December, 1839, which regulates many details not comprehended in the previous Act of 1838, it is ordered that each public asylum for the insane shall be administered under the authority of the Minister of the Interior, and the Préfet of the department; assisted by a commission of five members, acting gratuitously, and appointed by the Préfet. The director of the establishment, and the physicians, both chief and assistants, are, in the first instance, nominated by the Minister; but if vacancies afterwards occur, the Minister must appoint from a list of three candidates proposed by the Préfet. However, the patronage still remains, in reality, with the Minister, as he may add certain parties, of his own free will, to the list of candidates, and then nominate the favoured protégé to the vacant office. Besides, as the Minister may revoke the appointments of director and Physicians, upon the report of the Préfet, as he alone settles the amount of the salaries of these officers, and farther, as the Préfets are the servants of the Minister, by whom they are appointed, and at whose pleasure they retain their offices, the Minister of the Interior is, in fact, the sole patron and dispenser of all the important appointments now attached to the public insane asylums in France; much in the same way as the Minister of Justice has the patronage of those in the law. Although the chief physician must reside, according to this ordonnance, within the asylum, he may nevertheless, by favour, obtain a special permission from the Minister, if he chooses, to live elsewhere; but in that case he must visit the lunatics confided to his care at least once every day, and in

case he is prevented doing so, this duty must be performed by a resident physician.

Such are some of the general regulations respecting public insane asylums; but when any person is desirous of obtaining a license to open a private establishment, the applicant must petition the Préfet of the department in which the proposed asylum is to be situated, to whose satisfaction he must prove, that he is twenty-one years of age, and in the enjoyment of all his civil rights; that his conduct and morals have been good during the three previous years, as shown by the certificate of the Mayor of the Commune in which he has resided; and lastly, that he is a Doctor of Medicine. But in cases where the petitioner does not possess this last qualification, he may produce an obligation from some physician, who must engage, with the Préfet's approval, or undertake the medical duties of, and to reside in, the asylum; and as the Préfet can, at any time, revoke this appointment, it is not likely the treatment of the patients will be much neglected. Further details respecting the constitution and the ordinary government of public and private insane establishments in France, might be given; but as enough has already been said regarding the general administration of these institutions, I will only add, that besides the official persons previously mentioned, there is also an Inspector General of all the lunatic asylums of the kingdom, whose special duties, amongst others, are to visit and report upon these establishments to the Minister of the Interior; and as that responsible office is now ably filled by my old friend M. Ferrus, formerly physician to Bicêtre, and well known to the medical profession by his works on insanity, it is superfluous to speak of that gentleman's qualifications for such an appointment.—*Dr. Webster's Pamphlet on Insanity, 3d edit.*

NEW METHOD OF PREPARING SPIRITUS ETHERIS NITRICI

ADAPTED FOR MANUFACTURERS.

BY DR. GEISELER.

LET 24 ounces of rectified spirits of wine, sp. gr. 0.840, be mixed with 4 ounces of concentrated sulphuric acid, sp. gr. 1.845; allow it to stand for eight days, and then pour the mixture on 4½ ounces of perfectly dry saltpetre, previously introduced into a distilling vessel; adapt the head and receiver thereto, and draw over with a moderate fire 20 ounces of the liquid, which may be rectified with magnesia. Prepared in this manner, a copper still with a tin head and refrigerator may be employed. Another advantage is, that the ethereal product thus obtained is not very subject to decomposi-

tion. A mixture of pure nitric ether and spirits of wine will not furnish an officinal *spiritus etheris nitrici*, since this latter contains, in addition to the components of the former, aldehyd. It cannot be preserved over magnesia or bicarbonate of potassa (see *Phar. Trans.* p. 354), since these additions induce decomposition and formation of nitrate of the alkali.—*Annals of Chymistry and Practical Pharmacy.*

OFFICINAL IODIDE OF POTASSIUM

USUALLY contains, according to Woehler, iodate of potassa and carbonate of potassa, more especially that iodide which is furnished by manufacturers on the large scale. Herzog has shewn the composition of that prepared according to the *Pharm. Borr.* The salt of the *Pharm. Hanov.* frequently contains also iodate of potassa, since it is only completely reduced by the long-continued action of sulphuretted hydrogen. The best method is by decomposing the iodide of iron with carbonate of potassa at a boiling temperature. The difficulty is, to hit the precise point of decomposition, so that neither iodide of iron nor carbonate of potassa may remain in excess. The latter fault is easily amended by the addition of hydriodic acid.—*Annals of Chymistry and Practical Pharmacy.*

POISONING BY SNAILS.

A FAMILY of peasants living in the commune of Clermont, near Toulouse, fell a sacrifice to poisoning by snails. The physician who attended them communicated the following details to the *Journal de Toulouse*.

From what I collected concerning the circumstance which preceded the disease, and those which accompanied it, and from the symptoms which I myself witnessed, I had no difficulty in recognising a case of poisoning like those occasioned by narcotico-acrid vegetables, such as belladonna, hyoscyamus, thorn-apple, &c. No doubt remained in my mind as to the cause of this terrible disease, as soon as I knew that the snails eaten had been collected in the bushes called in French *redout*, but in the patois of the country *ronduit* (*Coriaria myrtifolia*). Every one knows that the leaves and young shoots are a poison to the domestic animals which browse on them, and that they kill them, after causing giddiness, and a kind of epileptic attack; but a fact which is not known, is, that the flesh of these animals may occasion the greatest danger, and even death itself. Symptoms like those which I have just witnessed are rare; but it is common to see among our peasants indisposition caused by snails, which comes from their eating

them as soon as their gathered. The example of the ancient Romans should be followed, and these animals should not be brought to table until they have been kept six months or a year, feeding them on bran and wild thyme. This is the way also to make them fatter and more savoury.—*Gazette Médicale*, Oct. 22, 1842.

TAR IN SKIN DISEASES.

DR. CLESS, in referring to a case of psoriasis treated by Dr. Blich, the cure of which he ascribes solely to the use of tar ointment, takes the opportunity of directing attention to the great efficacy of tar in all kinds of chronic disease of the skin. Following Emery's example, he has used it with success, for the last three years, in a great number of cases, in the Catharine Hospital, at Stuttgart.—*Haeser's Repert.*; and *Schmidt's Jahrb.*

OBSERVATIONS

ON SOME OF THE

SIGNS OF LIVE AND STILL BIRTH,

IN THEIR APPLICATIONS TO MEDICAL JURISPRUDENCE.

BY DR. BECK.

In all cases of alleged child murder, one of the great questions to be established is the fact of the child having respired or not. As the signs by which this is to be determined are still the subject of much difference of opinion among medical jurists, it becomes important to enlarge our existing stock of knowledge, by the accumulation of new and repeated observations. With this view, I have embraced every opportunity that has been thrown in my way of examining the dead new-born subject. The following observations are founded upon the examination of ten such subjects, which I have been enabled to make through the kindness of some of my professional friends. To Dr. Wilson, formerly physician of the Bellevue Hospital, from which institution many of the subjects were furnished, I am particularly indebted. As the circumstances connected with the birth of each are known, no doubt or uncertainty can attach to the accuracy of the conclusions drawn from them.

Among the tests principally relied on to determine this question, the most important are the following. 1. The static test. 2. The hydrostatic test. 3. The state of the ductus arteriosus.

1. THE STATIC TEST. This test is founded on the fact, that the act of respiration causes an increase in the weight of the lungs. There are two forms in which this test has been applied. The first is by comparing the

weight of the lungs with that of the body. This is commonly called Ploucquet's test. The second is that of taking the absolute weight of the lungs.

a. *Ploucquet's test.* This is so called from its having been originally suggested by Ploucquet. It is founded on the fact, that as soon as respiration takes place in the new-born infant, an additional quantity of blood penetrates the lungs, in consequence of which these organs become heavier than anterior to respiration. As the weight of the body of the child cannot undergo any change, he suggested accordingly, that a comparison of the weight of the body of the child with the weight of its lungs, would furnish a test by which to determine whether it had respired or not. From the few observations which he made, he came to the conclusion that where respiration had not taken place, the proportion between the weight of the lungs and that of the body was as 1 to 70; while on the other hand, where respiration had taken place, it was as 1 to 35; or in other words, that the weight of the lungs was doubled in consequence of respiration. A test so beautiful as this, and founded apparently upon principles so truly physiological, it was hoped would aid, very materially, to solve this important question. Numerous experiments and observations were accordingly made to test its accuracy in actual practice; and the result has been, that while some appreciate it very highly, by others it is viewed as altogether uncertain. In the ten cases which I have examined, the proportions are the following:

Children that had respired.	Children that had not respired.
1. 1 : 43	1. 1 : 58
2. 1 : 35	2. 1 : 36
3. 1 : 44	3. 1 : 49
	4. 1 : 32
Average, 1 : 40	5. 1 : 50
	6. 1 : 52
	7. 1 : 54

Average, 1 : 47

Now the conclusions to be drawn from these observations are manifestly adverse to the accuracy of this test. Taking the individual cases, there is not a single one of those which had not respired, which reach the proportions laid down by Ploucquet, while in the same list, cases 2 and 4 are very nearly the proportions laid down for children that have respired. If we take the general averages, too, of the cases, we find that they do not correspond with the proportion suggested by Ploucquet.

Since the time of Ploucquet, a great number of observations have been made by other persons, and as the result, they have all fixed upon different proportions. The following are some of them.

Before respiration.	After respiration.
Schmitt . 1 : 52	1 : 35
Chaussier . 1 : 49	1 : 39
Devergie . 1 : 60	1 : 45

These, as being deduced from a large number of cases, come nearer the true proportions than those of Plouquet, and correspond more nearly with my own observations. Still, however, it is to be recollected that they are mere average numbers, and therefore do not meet the circumstances of individual cases, which of course they ought to do, for the purpose of rendering them practically available. It may be asked, then, is this test to be rejected altogether? As an infallible one, it certainly should be. Notwithstanding this, it is still, I think, valuable as furnishing corroborative proof, and should, therefore, never be neglected. It should always be taken with other signs; and when this is done, it may aid very materially in coming to a correct conclusion.

b. Absolute weight of the lungs. By some it has been supposed that the actual weight of the lungs would furnish another criterion of the fact of respiration having taken place or not. Accordingly an average weight of 1000 grains has been proposed for the lungs of a child which has respired, and 600 grains for those of a child which has not respired. A moment's reflection, however, must convince us that this is still more uncertain than the test of Plouquet. Children, born at the full time, we know, differ greatly in their weight, and of course there must be a corresponding difference in the weight of the lungs. I have known a child born at the full time, healthy and perfect in every respect, and yet weigh only four pounds; while children weighing eight, nine, and ten pounds, are by no means uncommon. The lungs, therefore, of a child which had not respired, of nine pounds, would probably weigh more than those of a child of four pounds, which had respired; and such has been found to be the case by actual observation. In the cases which I have examined, the following were the weights.

Before respiration.	After respiration.
1. . . . 540 grs.	1. . . . 396 grs.
2. . . . 720	2. . . . 800
3. . . . 900	3. . . . 814
4. . . . 890	
5. . . . 900	Average 670
6. . . . 690	
7. . . . 689	

Average, 761

An analysis of these weights will show at once how fallacious this test must be. We have here, in three cases, before respiration took place, the lungs weighing more than those which had respired; while the general

average weight is greater in those which had not respired—just the reverse of what it ought to be, according to this test.

[To be continued.]

ON THE
LOCAL TREATMENT OF CHANCRES,
BY
SULPHATE OF COPPER AND CYANURET
OF MERCURY.

By DR. STROHL.

THE more rapidly primary syphilis is cured, the less likely are secondary symptoms to appear. The first object is most easily attained by cauterizing. Sometimes, however, this method is inapplicable; for instance, when the sore is very extensive, or much inflamed. In such cases, the author employs the sulphate of copper. The sores are dressed five or six times a day with charpie, which has been soaked in a solution of about a grain and a half of sulphate of copper to an ounce of water. Simple chancres, when thus treated, usually heal within twelve days. Dr. Strohl assures us, that he cures complicated chancres in an equally short time with an ointment composed of two grains of cyanuret of mercury to an ounce of axunge. This ointment is spread upon a piece of linen corresponding to the size of the sore. This dressing is apt to be painful at first; and it must occasionally be taken off, after it has been on for an hour or two, and the remedy must be applied in a weaker form. The pain is said to be most violent in half an hour or an hour, and frequently ceases entirely in two or three hours. When the chancre is extensive and painful, after the ointment has been on from four to ten hours, according to the sensibility of the patient, it is dressed with mercurial ointment, or opium cerate.

If the edges of the chancre have flattened, if the centre is cleaner, the pain less, and the suppuration healthy, (which may occur after the first application of the cyanuret of mercury, but, at any rate, not later than the fourth), the treatment with the sulphate of copper is finished.—*Oesterr. med. Wochenschrift, and Schmidt's Jahrb.*

SUCCESSFUL TREATMENT OF
IDIOCY.

M. SEGUIN, a young philanthropist, who has devoted himself to the instruction of children afflicted with idiocy, proposed to teach after his method a number of children taken from the hospitals. The *Conseil des Hospices*, on the report of M. Orfila, granted his

request. He was entrusted with twelve children, from the age of eight to sixteen, who were living in the Hospital of Incurables, and who were certified to be idiots of reputed incurability. Not one of them could read or write; several could but stammer a few words; others merely uttered a few inarticulate sounds; some were epileptic, and three or four had continual convulsive movements. After a year of assiduity, M. Seguin presented the children to a commission composed of MM. Fouché, Halpher, and Orfila. It was found that they could all read, and that some could write copies; that almost all spoke distinctly, and that their answers were correct; some could add, subtract, and even multiply.

They had also gained much physically, so that those children who before were merely a burden to the house, are now of use to it.

The Council, considering these results, has decided that M. Seguin, who previously was merely authorised to make trials, should have an express commission to continue them on a greater scale, and should be lodged, boarded, and paid by the administration. A special credit will be asked for this purpose from the Council-General of the department. We do not doubt but that the Council will join in so interesting a work.—*Gazette Médicale*, Oct. 22, 1842.

[In Dr. Aikin's amusing story, "The Boy without a Genius," a child, whose dulness has defied all former instructors, is successfully taught by a very patient schoolmaster. M. Seguin's success is another lesson of the same kind, and shows what patience can effect when rendered inexhaustible by benevolence.—*Translator's Note*.]

ADDENBROOKE'S HOSPITAL, CAMBRIDGE.

WE have to announce the election of three surgeons to this hospital—Mr. Lestourgeon, Mr. Hammond, and Mr. G. M. Humphry. "The latter (says the Provincial Medical Journal) was, we believe, comparatively a stranger, but the circumstances of his election are highly honourable to him: he was a distinguished pupil of St. Bartholomew's School, and obtained the Gold Medal on the examination for the Bachelor's Degree in Medicine at the University of London. The announcement of the vacancies at Addenbrooke's Hospital induced him to proceed to Cambridge, where he was honourably elected, in consequence of the character obtained by his successful studies." We are happy to add our testimony to that of our contemporary; Mr. Humphry having been known to us for a considerable time as a very useful contributor to the pages of this journal.

ROYAL COLLEGE OF SURGEONS.

LIST OF GENTLEMEN ADMITTED MEMBERS.

Friday, November 4, 1842.

H. Challinor.—B. K. Johnson.—J. Thompson.—C. E. Prothero.—W. Higgins.—H. Marder.—E. Jay.—A. Elsworth.—R. B. Walcott.—W. H. Hay.—R. Jones.

A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, October 29, 1842.

Small Pox	1
Measles	23
Scarlatina	46
Whooping Cough	27
Croup	11
Thrush	5
Diarrhoea	4
Dysentery	8
Cholera	1
Influenza	0
Typhus	44
Erysipelas	5
Syphilis	1
Hydrophobia	0
Diseases of the Brain, Nerves, and Senses ..	144
Diseases of the Lungs and other Organs of Respiration	351
Diseases of the Heart and Blood-vessels ..	22
Diseases of the Stomach, Liver, and other Organs of Digestion	68
Diseases of the Kidneys, &c.....	6
Childbed	10
Ovarian Dropsy	0
Disease of Uterus, &c.	5
Rheumatism	3
Diseases of Joints, &c.	2
Ulcer	0
Fistula	0
Diseases of Skin, &c.....	1
Diseases of Uncertain Seat	106
Old Age or Natural Decay	61
Deaths by Violence, Privation, or Intemperance	11
Causes not specified	1
Deaths from all Causes	967

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude $51^{\circ} 37' 32''$ N.
Longitude $0^{\circ} 3' 51''$ W. of Greenwich.

November.	THERMOMETER.	BAROMETER.
Wednesday 2	from 32 to 51	30.04 to 30.00
Thursday . 3	31 51	29.92 29.82
Friday . . 4	31 43	29.93 30.09
Saturday . 5	29 46	30.09 30.03
Sunday . . 6	30 42	30.09 Stat.
Monday . . 7	33 47	30.04 30.05
Tuesday . 8	36 46	30.05 29.95

Wind, N. and N. by E.

Generally overcast, except about noon; a little rain fell on the evening of the 3d and on the morning of the 6th, when a few flakes of snow were observed.

Rain fallen, 0.85 of an inch.

. November Meteors.—The period of the supposed annual fall of these phenomena arrives on Sunday next.

CHARLES HENRY ADAMS.

WILSON & OGILVY, 57, Skinner Street, London.

THE
LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL.

OF

Medicine and the Collateral Sciences.

FRIDAY, NOVEMBER 18, 1842.

LECTURES
ON THE
THEORY AND PRACTICE OF
MIDWIFERY,

*Delivered in the Theatre of St. George's
Hospital,*

BY ROBERT LEE, M.D. F.R.S.

LECTURE VI.

*On the State of the Uterus in the First
Month after Conception.*

ANATOMISTS have enjoyed few opportunities of examining the contents of the human gravid uterus soon after conception. Though Dr. W. Hunter was nearly forty years in London, he states that "the most early case of pregnancy which he ever had an opportunity of examining in the dead body, was of three complete months."

Mr. Ogle has given an account, in the second volume of the Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge, of the appearances which Mr. J. Hunter saw in the examination of a young woman who poisoned herself when the period of conception, he believed, could not exceed a month; and probably was much within that time. The arteries of the uterus were injected, and the smaller vessels filled to so great a degree of minuteness that the whole surface became extremely red. The cervix uteri and os tincæ were of their natural size; but the body, or that portion of the uterus next the fundus, was a little enlarged, and more prominent externally in the middle. The spermatic vessels were also enlarged. On cutting into the substance of the uterus, it had more of a laminated structure than in the unim-

pregnated state. This appearance of lamellæ was seen, upon examination, to be formed by veins somewhat enlarged, compressed, and transversely divided. The uterus was unusually soft in texture, and terminated on the internal surface in a pulpy substance. The blood-vessels of the uterus passed into and ramified upon this pulpy substance, which was continued across at the cervix uteri, so as to make the cavity of the uterus a circumscribed bag: and at this part the pulpy substance was so thin as to resemble the retina. This cavity had a smooth but irregular internal surface, and the pulpy substance upon which it was formed was evidently coagulated blood, and varied in its thickness in different parts. Upon a longitudinal section of the uterus, the posterior part of the coagulum, which was the thickest, was nearly half an inch: where it terminated towards the cervix, it was pendulous and unattached. There were also several loose processes, all turned towards the cervix; one of them very thin, as broad as a silver penny, and only attached by one edge to the fundus near the opening of the right fallopian tube. On slitting open the fallopian tubes, the coagulum was found to pass some way into them, and to extend more than half an inch on the left side, which had the corpus luteum. The coagulum was thickest at the orifice of the tube, and there adhered to the inner surface for the eighth part of an inch; beyond which it became smaller, and terminated in a point. In the left tube the coagulum was in two places coiled or folded upon itself, as if thrown back by the action of the tube. The portions of the coagulum at the orifices of the tubes were hollow. When the inner surface of the cavity of the uterus was examined with a magnifying glass, it was found extremely vascular, and dotted with innumerable whitish spots too small to be seen with the naked eye. The uterus was opened in a basin of clear water. The

incision was conducted with great circumspection, and very slowly continued, till the whole of its cavity was exposed. Every part of the internal surface was minutely examined with magnifying glasses; but in no situation was there any thing resembling an embryo to be found.

It has been inferred from this dissection that certain changes always take place in the uterus previous to the reception of the ovum, and that the embryo does not acquire a visible form for some time after these changes have been made.

As the ovum was not discovered in the tube, no conclusion whatever can be drawn from this dissection respecting the condition of the uterus, before the ovum enters its cavity. The ovum, indeed, might have entered, and also made its exit from the cavity of the uterus before the woman died, or before those changes in the uterus, above described, took place; but the probability is, that, though not detected, the ovum actually was in the uterus.

Sir E. Home has given the following description of the uterus and ovaria of a young woman, who died, as he supposed, eight days after conception, and which has often been referred to by authors:—The right ovarium had a small torn orifice upon the most prominent part of its external surface, which led to a cavity filled up with coagulated blood, and surrounded by a yellowish organized structure. The os uteri was completely closed with a firm gelatinous matter, and the two orifices at the superior angles of the uterus, by which this viscus communicates with the fallopian tubes, were open. The inner surface of the uterus was covered with coagulable lymph, among the fibres of which, near the cervix, was the ovum. It was oval shaped, and though at first partly transparent, became opaque from the action of the spirit. It was immediately taken to Mr. Bauer, who compared it to the egg of an insect, and succeeded in pointing out the effects of impregnation in two projecting points, the rudiments of the heart and brain.

It is impossible to admit that the rudiments of the heart and brain of the embryo could have been developed at this time, and been seen, without the amnion, chorion, vesicula umbilicalis, and the different parts of an organized deciduous membrane; and had these existed they could not have escaped some notice. I have no doubt that the right ovarium contained a false corpus luteum; and that the appearances here so generally and vaguely described in the uterus were not the result of conception. Sir E. Home attempted, from this case, to revive an erroneous opinion of Malpighi, viz. that the corpus luteum is not the effect

of impregnation, but a glandular structure in which the ovum is formed.

Dr. Burns states that he has examined very carefully three uteri within the first month, and was not able to discover either ovum or foetus.

Mr. Alexander Shaw has furnished me with the following description of three specimens of the uterine organs after recent impregnation, which were in the collection of Sir Charles Bell. In all of these the orifices of the fallopian tubes were visible at each angle of the fundus, or presented the same appearances which they exhibit in the unimpregnated condition of the organ. The woman from whom the first preparation was taken, had her leg crushed by the wheel of a waggon. The limb was amputated on the fourteenth day after the accident. She had informed the nurse that she was in the sixth week of pregnancy. The uterus was nearly twice as large as it is in the unimpregnated state; and this organ, together with the ovaria, the fallopian tubes, and the alæ vesperitilionis, were in a remarkable manner loaded with blood. The left ovarium had a more turgid appearance than the right: it contained a corpus luteum, and a bristle could be passed through the rent in the peritoneal covering at this part. The walls of the uterus were three quarters of an inch in thickness; there was an accumulation of mucus in the cervix and os tincæ, and the glandulæ Nabothi were enlarged. An extremely vascular deciduous membrane lined the uterus. Its surface was villous and smooth in all its extent; it was confined to the body of the uterus. The uterus was dissected so as to expose the orifice of the left fallopian tube—that is, on the same side on which the corpus luteum was discovered. When the angle at which the tube enters was laid open, a distinct channel was seen formed in the deciduous membrane, and leading to the point where its opening is naturally found. This passage, and the opening into the tube, was free; so that a bristle could be introduced into the orifice, and met with no obstruction until it was fully inserted within the walls of the uterus. The ovum was not discovered.

The young woman from whom the next specimen was obtained poisoned herself. The uterus was increased in size, and its fundus uteri was turgid with blood. A deciduous membrane was seen occupying the body of the uterus. There was a firm plug of mucus contained in the cervix and os tincæ. The orifices of the tubes were visible at each angle of the fundus, or presented the same appearances which they exhibit in the unimpregnated state. A bristle could be introduced into them; but, as in the former preparation, owing to the narrowness of the

canal, there was an obstruction when it arrived at the part where the tube is enclosed within the parietes. The corpus luteum was in the right ovary. The ovum was not detected.

The third specimen was removed from the body of a young woman who poisoned herself with sulphuric acid. The uterus was larger and softer than in the unimpregnated state. On slitting it open a gelatinous deposit was found in the cervix, and a deciduous membrane occupied the proper cavity. Adhering to the fleecy decidua, Sir Charles Bell found a small body, which he imagined might be the ovum. The orifices of the fallopian tubes, as they enter the cavity of the uterus, presented the same appearances which have been described in the two preceding preparations. The right ovarium contained the corpus luteum.

Baer examined the inner membrane of the uterus soon after supposed conception; and he says the villi were elongated, and between these, and passing over them, was an organized substance, evidently the deciduous membrane. The vessels of the uterus were continued into this substance, and formed a number of little hoops around the villi, and anastomosed with each other. The ovum was not discovered either in the uterus or tube.

E. Weber, in 1830, examined the uterus of a woman who committed suicide on the seventh or eighth day after impregnation was supposed to have taken place. The uterus, tubes, and ovaria, were enlarged and congested. One of the Graafian vesicles was burst, and a layer like organizable lymph, composed of little cylinders, covered and intervened between the enlarged villi of the internal membrane of the uterus. The ovum was not detected either in the uterus or tube. "These observations of Baer and Weber are those, (says Professor Wagner,) that treat of the decidua at the earliest period of its existence, even before the entrance of the ovum into the uterus."

It is a remarkable circumstance, that in none of the preceding histories of the human uterus, soon after actual or supposed impregnation, was the ovum seen either in the tubes or in the uterus, and they furnish, therefore, no information respecting the state of the uterus before the entrance of the ovum. These dissections prove that all the blood-vessels of the uterus enlarge, and the different coats soften and are more easily separated soon after conception; that the inner surface becomes covered with a soft substance like coagulable lymph, or deciduous membrane; and that the cervix is closed by a viscid gelatinous matter formed by the glands situated in it. They further demonstrate, that the fallopian tubes are open, and that these canals communicate with the

cavity of the uterus, as they do before impregnation. The ovum, therefore, at first, must lie loose in the cavity of the uterus, like the ova of the lower animals, and have the power to attach itself to any point of the internal surface of the organ, and even to the circumference of the cervix.

In every case, observes Dr. Burns, the decidua, consisting of two layers, is completely formed before the ovum descends. When the embryo passes down through the tube, it is stopped when it reaches the uterus by the inner layer which goes across the aperture of the tube, and thus would be prevented from falling into the cavity of the uterus, even were it quite loose and unattached. By the growth of the embryo, and the enlargement of the membranes, this layer is distended, and made to encroach upon the cavity of the uterus, or, more correctly speaking, it grows with the ovum. This distension or growth gradually increases until at last the whole of the cavity of the uterus is filled up, and the protruded portion of the inner layer of the decidua comes in contact with that portion of the uterus itself which remains attached to the outer layer. Breschet, Velpeau, and almost all the numerous recent writers on embryology, have repeated this statement.

Researches in regard to the state of the mucous membrane of the uterus after conception, says Wagner (1841), inform us that even before the arrival of the ovum within its cavity an exudation of an albuminous fluid takes place from its surface, which, soon acquiring consistency and the appearance of concrete fibrine, is gradually formed into a membrane, thin and delicate at first, but which continually increases in thickness, and finally presents a fac-simile or mould of the inner cavity of the uterus. This membrane even appears though the ovum never reaches the cavity of the uterus, but passes through the various stages of its evolution in the ovary, fallopian tube, or abdomen.

I believe this is the doctrine now taught in almost all the anatomical schools in this country and on the continent, although it is unsupported by a single observation; and is proved to be erroneous by all these dissections. There is no case, as far as I know, of early gestation, in which the fallopian tubes have been seen covered with decidua before the arrival of the ovum in the uterus, and you will soon be convinced that the decidua reflexa cannot be formed in the way this hypothesis supposes. This hypothesis, in fact, rests entirely upon certain appearances observed within the uterus in some cases of extra-uterine gestation, from which no inferences can be drawn which are applicable to ordinary pregnancy.

Dr. W. Hunter examined a case of fallopian tube gestation in which the uterus was enlarged, and the membrana decidua was distinctly seen lining the fundus uteri. From this appearance he inferred, that the decidua, or outer stratum of the secundines, belongs to the uterus, and not to the ovary, or that part of the conception which is brought from the ovum.

Although it be extremely probable, says Dr. Baillie, that the decidua begins to be formed at the time that the ovum passes into the cavity of the uterus, yet it is not absolutely necessary for the formation of the decidua that the ovum should reach that cavity. When an ovum grows in the ovarium or the fallopian tube, the decidua is both formed in the uterus, and the uterus is considerably enlarged, so as to undergo, to a certain degree, changes exactly similar to those which take place in natural pregnancy.

Though the fœtus be extra-uterine, observes Dr. Denman, the uterus becomes considerably enlarged, and performs its proper office by providing the efflorescent or deciduous membrane for the reception of the ovum.

Dr. Burns says, it is curious to observe that invariably the uterus enlarges considerably, and "in every instance decidua is formed." Meckel, Breschet, Velpeau, and every other author with whose writings I am acquainted, have given the same opinion on this subject; and not only has this been considered an undoubted fact in all cases of extra-uterine gestation, but in common pregnancy it has been supposed that a deciduous membrane is invariably formed within the uterus, before the ovum enters its cavity. That the decidua is not formed within the uterus in all, or in any cases of extra-uterine gestation, the following facts seem to prove.

A lady died suddenly in 1829, from internal hæmorrhage, produced by rupture of the right fallopian tube, which contained an ovum. On opening the tube, and examining the different parts of the ovum, I found a deciduous membrane every where surrounding the chorion, and closely adhering to the inner surface of the tube, as the decidua usually does to the lining membrane of the uterus, in ordinary gestation. Within the decidua, the chorion, placenta, amnion, and embryo, were distinctly seen. The uterus was larger than natural, and there was not the slightest trace of any decidua lining its internal membrane. Had it existed, or any thing resembling a layer of coagulable lymph, it could not possibly have avoided detection. The lining membrane is now in precisely the same state it then was, and by examining the preparation [exhibiting it], you will see that there is a decidua surrounding the ovum in the tube, but not a vestige of decidua within the uterus. Dr. Merriman was present

at the examination of the body of the lady from whom this specimen was obtained; and it led me first to doubt the correctness of Dr. Burns's statement, that in every instance decidua is formed in the uterus. I soon after this found that in a case recorded by Mr. Langstaff in the *Medico-Chirurgical Transactions*, and in another by Velpeau, there was no deciduous membrane found within the uterus.

On the 18th of July, 1836, a patient of Dr. Stodart's, after suffering for some time with symptoms of inflammation and retroversion of the uterus, was seized with great faintness and soon expired. A large quantity of fluid blood was found in the abdominal cavity, and the right fallopian tube, which contained an ovum of ten or twelve weeks, was extensively lacerated near the fimbriated extremity. On removing the uterus and its appendages from the body, and carefully examining the ovum contained in the right fallopian tube, it was evident that a deciduous membrane every where surrounded the chorion, and adhered to the inner surface of the tube. The placenta which was situated at the extremity of the ovum nearest the uterus, was seen covered with the decidua, and coagula of the fibrine of the blood, were traced from the interstices of the placenta through the decidua into veins, in the thickened muscular coat of the tube. The cells of the chorion were full of coagula of fibrine. Between the chorion and amnion, near the placenta, was seen the vesicula umbilicalis, with its slender peduncle proceeding to the umbilical cord. The appearance of the amnion, cord, and embryo, was perfectly natural. The uterus was considerably enlarged, and its inner surface was coated with a very thick layer of a yellowish-white soft substance, like common adipose matter, or lard, and bearing not the most distant resemblance to deciduous membrane. There was no trace of any vessel in this thick coating. The orifice and neck of the uterus were closed with the usual viscid substance formed by the Nabothian glands. The appearances are well preserved in the preparation of the parts [exhibiting it]. You observe there is a perfect ovum within the tube, and that the vesicula umbilicalis floats about in the spirit when it is moved. M. Velpeau, I think, states that he has a preparation in which this is present; but I have never seen one, except this, in which the vesicula umbilicalis was in the tube. The soft thick substance lining the uterus, is, you see, entirely different from the deciduous membrane of this ovum [exhibiting it], which was expelled in abortion at the end of the second month of pregnancy.

But these are not the only cases of extra-uterine gestation, in which there was no decidua within the uterus. Dr. Blundell states that he

"has seen two tubal cases in which the decidua was wanting;" Dr. Murphy has described a case in the *Dublin Journal*, for 1838, in which there was no decidua within the uterus. It was not ascertained whether in these cases there was a decidua in the tube, but there can be no doubt of the fact, for the decidua is as essential to the embryo in the early months of pregnancy, as the placenta is to the fetus in advanced gestation. In a case which occurred to M. Chaussier in 1814, the decidua surrounded the ovum in the tube. Mr. Streeter has pointed out to me a case of extra-uterine gestation, (tubal) the history of which has been recorded by Dr. Cookworthy, in the 1st vol. of Dr. Johnson's *Medico-Chirurgical Journal*, in which "there was no *membrana decidua*" within the uterus. Mr. O. Clayton has related in the *Lancet*, very recently, another instance of tubal gestation, in which there was no true decidua in the uterus, but a membrane which had a considerable resemblance to it at first sight, and might have been mistaken for decidua, as many membranes have been which have been expelled from the uterus during painful menstruation.

From these facts we may conclude, that the decidua is not invariably, if ever formed within the uterus in cases of extra-uterine gestation, and that if it were so, further evidence would still be required to prove that an organised membrane always lines the uterus, like a shut sac, before the ovum enters its cavity after common impregnation.

Two diagrams, from Baer and Purkinje, are here subjoined, to illustrate the description of the Graafian vesicle and human ovum, given in Lecture III. p. 96.

FIG. 1.

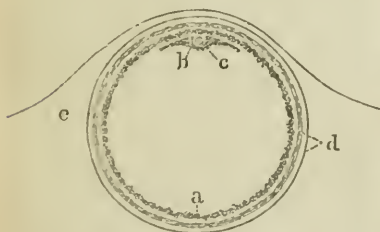


Fig. 1 is a diagram of a section of the Graafian vesicle and its contents, shewing the situation of the ovum. *a.* The granularly membrane. *b.* The proligerous disc. *c.* Ovum. *d.* The inner and outer walls of the Graafian vesicle. *e.* Indusium of the ovary derived from the peritoneum, the stroma immediately underneath which is condensed so as to form the *tunica albuginea*.

FIG. 2.

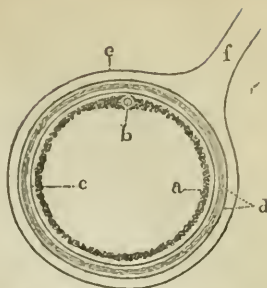


Fig. 2 is a diagram representing a section of the hen's egg within the capsule of the ovary, and the position of the vesicle of Purkinje. *a.* The granularly membrane, forming the periphery of the yolk. *b.* The vesicle of Purkinje embedded in the cumulus. *c.* The vitellary membrane. *d.* The inner and outer layers of the capsule of the ovum. *e.* The indusium of the ovary. Between the indusium and the capsule the stroma is seated. *f.* The pedicle by which the capsule is attached to the ovary.

CLINICAL LECTURES,

Delivered at St. Thomas's Hospital,

BY SAMUEL SOLLY, Esq., F.R.S.

Assistant-Surgeon, and Lecturer on Clinical Surgery, at St. Thomas's School.

On Diseases of the Spine.

I HAVE selected the diseases of the spinal column as the first subject for consideration in the lectures on clinical surgery, which this season it will be my duty to deliver. It is one to which your attention will be frequently called in private practice, and one which is much neglected by the student during his attendance at the hospital.

There is no portion of the human frame which is more interesting, in a physiological point of view, than the spinal column; and our knowledge of physiology will assist us more in the treatment of its diseases than similar knowledge in regard perhaps to any other part of the body.

I have often had occasion in this theatre to dwell upon the important part which the muscles perform as accessory and intelligent ligaments—binding bones together, strengthening joints, and affording especial support when and where it is most required. Illustrating my observations by the structure of the knee-joint, the principal strength of which is to be sought, not in the ligaments, strong and numerous as they are, but in the powerful extensor and flexor muscles which surround it with their aponeurotic tendons, and brace it up on every side. This principle may be well applied to the organization

of the spine in connection with the diseases to which it is liable. The student who neglects to include the muscles of the back in his consideration of the mechanism of the spine as a series of joints, studying only the ligaments, will never be able to reason correctly upon the causes which produce spinal distortion, or employ judicious means for its correction. In the chamber of the sick, you must not regard the spine simply as an inflexible column from which the muscles moving the upper extremities may act as from a fixed point. If you were to take the pains to watch the varied movements of this beautiful column when exposed;—an opportunity which, unfortunately for anatomists as well as for artists and sculptors, is seldom afforded in this inclement clime,—you would see how flexible it is, and how much it is influenced by the muscles attached to it. Every school-boy knows how fatiguing it is to sit for any length of time on a form without a back to it; but have you, since you have been studying anatomy, ever reflected that such fatigue demonstrates how much more the vertebral column must be supported by muscular fibres, which experience fatigue, than by ligamentous fibres, which do not? Ignorance of the general physiology of muscular action, and the particular physiology of the dorso-spinal muscles, first opened the door to the quack and instrument-maker to undertake the treatment of spinal deformity instead of the surgeon: and I can conceive no greater amount of horrible torture inflicted on the human race, than that which ignorant and unprincipled men have perpetrated under the plea of curing deformities of the spine: it has cast a stain upon the profession, for ignorance of physiology and anatomy has not been limited to quacks and mechanists.

The study of the muscles of the back is looked upon by the pupil in the dissecting-room as a mere exercise of the memory, which is necessary for him when he is going up to the College, but of no value whatever in the practice of surgery. Often and often have I been asked by students what is the use of learning the muscles of the back, for we shall be sure to forget them as soon as we have passed the College? Nor is it of any use if they merely learn their origin, and insertion, and relative position, without understanding philosophically their actions and offices. The best method of studying the anatomy of these muscles, so as to retain a knowledge of their functions which will avail you in the treatment of the deformities of the spine, is to include all the muscles attached to the spine, inclusive of the sacrum,—not merely the muscles of the back—in one list, and then to arrange them under four heads:—1st, Those which arise from the spine, and are inserted into the extremities;

2d, those which arise from the spine, and are inserted into the ribs; 3d, those which arise from the spine, and are inserted into the head; 4th, those which arise from one portion of the spine, and are inserted into another.

In the first division you have on each side seven—the *latissimus dorsi*, *trapezius*, *rhomboidei*, *levator scapulæ*, the *psosæ*, and *quadratus lumborum*.

In the second six, and one set—the *serratus posticus*, superior and inferior *sacro lumbalis*, *levator costarum*, *scaleni*, and *diaphragm*.

3d, Ten—*splenius capitis*, *complexus*, *trachelo mastoideus*, *obliquus superior capitis*, *rectus posticus major* and *minor*, *rectus lateralis*, *rectus anticus major* and *minor*.

4th, Ten, and three sets—*longissimus dorsi*, *sacro-lumbalis*, *spinalis dorsi*, *semi-spinalis dorsi*, and *colli*, *cervicalis descendens*, *transversalis colli*, *splenius colli*, *obliquus inferior capitis* and *longus colli*, *multifidus spinæ*, *inter-spinales*, and *inter-transversales*.

The term origin of a muscle is very apt to mislead the student, as it conveys the idea that it is invariably the fixed point, instead of being in its turn moveable, as is the case with regard to almost all the muscles of the body, and especially so in the muscles of the back. For instance, the *latissimus dorsi* muscle is described as arising from the ilium, the sacral and the lumbar vertebrae, and the ribs, and inserted into the humerus. When these points which are called the origin are fixed, its action is to move the upper extremity backwards, and rotate it inwards. But suppose its insertion to be fixed on one side, the right arm, for instance, while the muscles attached to the spine on the left side remain in a relaxed state, then will the *latissimus dorsi* muscle act from the arm as the fixed point, and curve the lower portion of the spine to that side, and draw up the right hip. The action of both muscles from the arm upon the trunk is well seen if we lay hold of a bar above us, and draw the body up to it, when the arms are of course the fixed points, and the spine the moveable one. From this illustration you will comprehend how all the muscles between the extremities and the spine are to be considered in connection with distorted spine: acting both from the spine on the arms and legs, and from the arms and legs on the spine. Also that, in order to move the arm on one side, the spine must be first fixed by muscles attached to the opposite side; just as the muscles which act from the *os hyoides* upon the lower jaw to open the mouth can only produce that effect while the *os hyoides* is fixed by those muscles which connect that bone to the sternum and scapula; for when it is not so fixed, the

very same muscles raise the os hyoides as in the act of deglutition. And although the spine is not so moveable as the os hyoides, still the ligaments alone are not sufficient to prevent its being drawn out of the perpendicular line.

In connection with the attachment and action of the spinal muscles, the surgical pathologist must study well the direction of the articulating surfaces of the vertebræ, in order to connect in his mind the influence which these muscles have over the joints of the spine. He observes in the cervical region that the articulating surfaces are nearly horizontal; consequently that this portion of the column must be dependent for its erect position upon the ligaments which run from one bone to the other, and to the numerous muscles which are attached to it; for he sees that there are no projecting lips of bone on the sides of the articulating surfaces whereby they are locked together, as is the case in some joints, and in portions of the spine in many of the lower animals. As this mode of articulating the bones gives great freedom of motion, it necessitates a greater number of muscles to keep it upright. In the dorsal region, as the articulating surfaces are placed nearly perpendicularly, the spine does not require the same amount of force to prevent it falling forwards as to prevent it inclining to one side, and he meets with that enormous mass of muscles usually described as the longissimus dorsi, sacro-lumbalis, spinalis dorsi, semi-spinalis dorsi—muscles known in the aggregate as the erector spinæ muscles.

In the lumbar region he sees that the great breadth of the bones, and the corresponding great extent of intervertebral ligaments, with the locking together of the bones, limits the motion, and renders necessary the fewer muscles to move and to support it.

In these observations on the physiology of the muscles of the back, you will perceive that I have only attempted to shew you the importance of the subject in relation to spinal diseases, without entering minutely into all those details which it is capable of, both in an anatomical and physiological point of view.

Deformities of the spine may be divided into two grand classes: first, those which result from disease commencing in the osseous tissue, and those which are occasioned primarily by a want of sufficient support from the muscles which are attached to the spine. This deficiency on the part of the muscles may arise from general debility, from partial debility,—the muscles on one side obtaining the mastery over their antagonist muscles on the opposite side; from excess of power in the muscles of one side,

in consequence of their being more constantly employed than their antagonists, which remain comparatively idle, and from a variety of other circumstances which shall be referred to hereafter. The deformity which is consequent upon diseased bones is an angular curvature, the convexity projecting backwards. Its diagnosis is extremely important, and it shall form the subject of future observations.

In the other class of distortions, the spine is more or less curved laterally, and known under the name of *lateral curvature*. And although caries of the spine is occasionally to be met with in connection with lateral curvature, it is not usually the primary affection; and for general purposes the terms *angular* and *lateral* curvature sufficiently distinguish them into two grand pathological classes.

I have now selected the subject of lateral curvature, as it may be well illustrated by the following case, taken when the subject of it was first admitted by Mr. Perry, and subsequently by her present dresser, Mr. Renwick:—

I will now read to you the case. Harriet Town, æt. 18, milliner, single, slight made, and rather stumous appearance, admitted into Lydia's ward, St. Thomas's Hospital, on the 15th of August, 1842, with lateral curvature of the spine. The principal curve in the dorsal region, with its convexity to the right side; slighter curve in the lumbar region; convexity to the left side. The general appearance of the figure not much altered, when viewed anteriorly; but posteriorly, in addition to the deformity produced by the curvature of the spine, the projection of the scapula is very decided. She traces her present condition to ill health six years ago. At this time she suffered much from pain in her left side, which caused her to lean in that direction. There has not been any catamenial disorder. Menstruation came on at the age of fourteen, and continued regularly since that period, though her general health has never been very good.

She says she is at present getting worse, that she is very weak, that her appetite is very variable, that she perspires on the slightest exertion; she complains of dull aching pain in the loins, much increased by percussion on the vertebræ; occasional numbness of the legs, but no paralysis of motion. The treatment pursued before her admission was chiefly the administration of tonic medicines, and the application of strengthening plasters to her back. She attributes the want of improvement to having closely devoted herself to needle-work. On her admission, I directed her to maintain the recumbent posture during the greater part of the day, and to use her left hand and arm in learning to sew, not employing the right

more than was absolutely necessary; a moxa on the side of the lumbar portion of the spine, where her pain was more severe; as a tonic medicine—mist. iodin. c. gent. ter die; pil. aloes c. myrrh, occasionally.

It is now just two months since she was admitted, and she has been very much benefited by the treatment: the curvature is much less; the shoulder-blades do not project so much; she has very little pain in her loins, and her general health is very decidedly improved.

The distortion of the spine in this case arose principally from a want of power in the erector muscles of the spine to perform their office as accessory and intelligent ligaments in maintaining the spine in a straight line when the muscles of the right scapula were unduly called upon; and although we must not altogether omit the fact of her being induced to incline to the left side, in consequence of the pain she experienced, I considered that the action of the trapezius rhomboidei and latissimus dorsi muscles belonging to the right arm, not being, from this general debility, sufficiently counteracted by those of the left, were the principal agent in the production of the deformity. The pain which she suffered in the lumbar portion of the spine indicated the strain upon the ligaments in that situation, occasioned by the yielding of the spine in the formation of the second or supplementary curve to counterbalance the original or dorsal one. The result of the treatment shews that the bodies of the vertebræ had not yet been materially altered in form, as you see in the preparation before me—the result of longstanding disease. In all lateral curvatures of the spine, the intervertebral substance is necessarily compressed on the concave side of the curve; and when such pressure has continued for some time, absorption takes place, which does not stop in the fibrous tissue, but extends to the bone; and in such cases the simple treatment which succeeded in this case would not avail. There is another consequence of the continuance of the deformity unremedied by surgical aid, which this preparation also illustrates;—I allude to the production of this osseous layer, which has been thrown out on the sides of the bodies of the vertebra to act as a natural splint, and strengthen the bent and weakened column. Now, beautifully as this provision exhibits the resources of nature, you will remember that such a growth would render all attempts to correct the deformity not merely nugatory but improper. It is, then, of the greatest importance, in all lateral curvatures of the spine, before you commence your treatment, to ascertain how long the disease has existed, and how far the natural flexibility of the spine is interfered with.

In private practice, when you are called to such a case as the one before us, the probability is, that the friends have no idea that your patient has any affection whatever of the spinal column. They tell you that they wish you to see Miss —, because she has a swelling in her bosom, or that one collar bone is larger than the other, or that her shoulder or her hip is growing out. But as soon as the patient appears, you perceive, from the position of her trunk, the spinal column is in fault.

For, generally speaking, you are called to these cases in quite their early stage, and before the secondary curve, by which the primary one is corrected, has occurred, and the trunk is not carried in the erect posture. There is a halt in her step, arising from the tilt of the pelvis, thus raising one of the lower limbs, and virtually shortening it. You suggest the possibility of the spine being in fault, and request an examination. You next inquire into the history of her ailments; and most probably you find, as in the present case, that there is some defect of constitution, as exhibited in a general want of power, increased by some evil habit arising from improper management during the progress of her education; such as confinement to seats without backs to rest the spine on, or straight high back chairs, which are as bad, or the slavery which many unfortunate females are doomed to undergo, as a milliner's apprentice, with her needle in her hand from morning till night, only interrupted to receive a hurried and scanty meal, which ill provides for the vital wear and tear of so many hours of continued labour.

There are some cases of lateral curvature, but I believe they are very rare, which arise from unnatural action of certain muscles of the spine produced by abnormal innervation—such as we see in infancy, the result of dental irritation, and occasionally followed by various forms of club-foot or partial paralysis. I will call your attention to the first case of this kind, which presents itself in the house. The spine is sometimes bent down in the children of the poor, by its being required to sustain day after day heavier weights than it is calculated to sustain. I saw an interesting case in the summer-time of spinal curvature, in a girl about 14 years old, on the borders of Epping Forest, produced by carrying heavy loads of faggot wood on the right shoulder. Tight lacing is an occasional cause of deformity, though not, as some authors would lead you to believe, the most frequent. The pressure of a very stiff unyielding strap will operate injuriously, by confining the scapula so as to interfere with the healthy and complete action of those spinal muscles which are attached to it. This confinement allows the right arm, which must be used, to obtain

under power. It is also possible that, in weak, sickly girls, the direct pressure of the stays on the ribs may operate upon the spine, driving it from the side on which the pressure is greatest; but such cases are rare.

It is seldom that you find in lateral curvature that the spine is not more or less twisted or contorted. The transverse processes, instead of projecting directly outwards from the spine, are turned together with the bodies, partially forwards and backwards; so that supposing the convexity of the lateral curve is to the right, the right transverse processes project partially backwards; and as they carry the ribs with them, the angles of the ribs project, forming a considerable ridge, throwing the spinous processes further forwards. Mr. Shaw relates a case in which the projection of the transverse processes in the neck was so great that it was mistaken by the practitioner for a tumor, which he attempted to remove by bleeding and blistering.

The contortion or twisting of the spine was, I believe, first described by Dr. Dodds, a surgeon in the navy; and although I cannot agree with him in his explanation of the manner in which such contortion is produced, the fact itself, which is very important, cannot be disputed. The importance of a knowledge of this alteration of the position of the transverse processes is dependent on the effect which it has of destroying the symmetry of the erector spinal muscles on the two sides of the column.

It gives them an unnatural fulness, especially in the loins, which, without due consideration, you might attribute to an inordinate development of muscles, and feel tempted to divide it with your knife, under the idea that such projection of the muscles proved them to be in a state of active contractility.

The muscles of the spine do become shortened on the concave side of the curve; but I agree with Mr. Shaw in considering this as the consequence of the curve, and not the cause of it,—merely an instance of the way in which muscles adapt themselves to alterations in the form of the skeleton.

I must next caution you against confounding simulated disease of the spine with real curvatures. It is not often in private practice that we meet with such deception; though that strange disease, hysteria, sometimes calls forth the powers of its victims to simulate deformity of the spine; but in hospitals and in the army such cases occasionally occur. M. Guerin states that pretended deviations of the spinal column may be distinguished from the morbid by the following marks:—

1. In the simulated deviations, the seat of the deviation is always the same—the

dorso lumbar region; the curve constantly the same, having its centre in the middle of the last dorsal vertebra; absence of a projection or gibbosity in the middle of the convexity of the curve; furrows or folds of the skin, generally two in number, always situated between the crista of the ilium and the last rib; considerable inclination of the trunk, the superior extremity separated very much from the line of gravity; elevation of the hip on the side of the concavity when the heel is detached from the ground; proportional shortening of the corresponding.

2. In the morbid deviations, on the contrary, the variable seat of the curve, the curves multiplied and alternate, one of which is the principal and the other supplementary; constant presence of relief, or dorsal and lumbar gibbosities on the side of the convexity of the curves; cutaneous furrows, pronounced and variable, with regard to the seat, as the deviations themselves; not much inclination of the trunk, on account of the supplementary curves; elevation of the hip almost insensible, or for some time only.

The simple lateral curvature, which the present case illustrates, is consequent on debility of the muscular system, and it must not be confounded with that deformity which is occasioned by imperfect development of the osseous tissue. There is a want of due solidity in the skeleton, occasionally met with in infancy, and known by the name of rickets, which it is necessary we should distinguish from the weakness upon which this lateral curvature depends. The term rickets, or rachitism, has been used so loosely, that it may be well to consider briefly its distinguishing characters upon the skeleton. If you look at this beautiful specimen of the disease, you will see at once that the whole frame-work, from the bones of the feet up to the cranium, is deformed; the bones of the limbs are curved, and more or less twisted on their axis. Their extremities are swollen and deformed; the articulations of the feet and hands offer directions and relations which are not natural; the apophyses and points of attachment of muscles are unnaturally prominent; and, to use the expression of M. Guerin, who has thus described these changes, the ribs are rounded, as it were blown up, and present, at their sternal extremity, a curvature, the concavity of which looks forward and outwards. The chest is thus widened transversely, and depressed into a furrow, in the middle of the articulations of the ribs with the sternal cartilages. The vertebral column deviates laterally or posteriorly, and presents a succession of alternate curves. The surfaces are rounded, and, as it were, distended and swollen, presenting many points of depression, which approach the articulating surfaces of the bodies: the vertebral appendices

participate in the appearances, and are more or less depressed, as it were, *ecrassée*, in the vertical direction, from muscular action. The pelvis has lost its symmetrical conformation. The sacrum is sometimes vertical, and sometimes more curved than natural and thicker than usual. The hip-bones are more or less approached; they are thicker, as are also the blade-bones and sternum; they are shortened and thickened: the head is generally voluminous. The cranium thickened principally on the sides. The bones of the face exhibit, by their exaggerated development, some marked projections, the angles being more acute than natural; the relations of proportions of all the parts of the osseous system are generally perverted. The skeleton in its totality, as in each of the bones composing it, offers a true reduction in length, in extent, and attests an arrest of development. Rickets, properly so called, is a malady of infancy: it is rarely observed in the foetus; more frequently towards the age of 18 to 20 months; very rarely after the age of six years.

Upon 346 cases which M. Guerin examined under this point of view, the invasion took place as follows:—

	Cases.
Before birth	3
During the 1st year . . .	98
2d „	176
3d „	33
4th „	19
5th „	10
From the 6th to the 12th . . .	3
	—
	342

It attacks both sexes nearly equally.
Upon these 346 there were—

Males . . .	142
Females . . .	198
	—
	346

These facts show that many of these deviations of the vertebral column, which have been attributed to rachitism, are produced by other causes. Thus, all the kinds of softening of the bones in adults, and all the deformities which supervene, almost exclusively in young girls towards the age of puberty, are not caused by rachitism.

M. Guerin shews the rachitic softening of the bones as a secondary effect; the disease first exhibiting itself by gastro-intestinal derangements, &c.

The period of incubation, as he calls it, he says is from two to six months. The true characters of the period of incubation are the nocturnal sweats of the belly and head, the tympanitic and swollen belly, diarrhoea without colic, a moist skin, a constant and uniform febrile movement, lastly, great sensibility of the osseous system.

The immediate influence of rachitism

upon the osseous system is shewn by four orders of different facts:—by deformity of the bones; by their reduction in dimension; by the ultimate alterations of their tissue; lastly, by the disturbance and retardation of the progress of ossification.

Rachitic deformity is developed successively from above to below, from the bones of the legs to the femora, from the femora to the pelvis; next, the superior extremities, the thorax; and lastly, the vertebral column and cranium. M. Guerin says, after having opened and examined a great number of rachitic bones, I am convinced that the alterations of texture which they present are positively different, whether they belong to the period of incubation, deformity, or resolution. The diseases with which rachitism has for some time been confounded are, for the most part, deformities of the spine, tubercular affection of the bones, different species of osteo malacia. The deformities of the spine, improperly attributed to rachitism, are all the lateral deviations, of whatsoever nature they may be; excursions, principally tubercular excursions.

Rachitism of the spine does not occur without indications which cannot be mistaken of its existence in other bones. Tubercular excursions are never produced or accompanied by deformities of the lower limbs. Softening of the bones in adults, to which M. Guerin limits the denomination of *osteo malacia*, he considers the results of specific causes—as scorbutus, syphilis, rheumatism, of some particular defect, as the cancerous taint: all those subjects who have shewn it have presented, in the beginning of the softening process, some general symptoms of these alterations. It is announced by vivid and deep pains in the bones. The progress of the disease is slow, and enduring for a number of years, sometimes up to 20. It is not announced simultaneously in all parts of the skeleton, neither below or above, but it only attacks by fractions; so that when we open a subject which has presented it but slightly advanced, we find all the bones separately affected, and at the same time portions of the bones are altogether softened on the one side, and other portions of the same bone preserve their resistance and their normal texture.

M. Guerin states that he possesses many examples of this partial ramollissement in subjects who have died in consequence of cancer of the stomach, breast, or uterus. Osteo malacia and rachitism are thus essentially different. In the one the osseous tissue is merely softened; it preserves none of the consistency or texture of bone; it is as if we poured upon the seat of the softening a very energetic fluid, which had the property of causing all traces of the calcareous salts to disappear, leaving nothing but the fibrous

web, presenting here and there large areola similar to the large venous sinuses of the liver. I have considered this digression necessary, to prevent your confounding the lateral curvature of adult life with that which originates in infancy as the effect of rickets; and I consider no apology necessary for the introduction of the valuable opinions of M. Guerin on this subject.

We must now, gentlemen, consider the treatment of these cases of lateral curvature when they present themselves in the early stages, as in the case which has just been related.

First, then, with regard to the constitutional treatment of such cases. It is a disease of debility, and the constitution must be strengthened; but you must not suppose that this is to be done by simply giving tonic medicines. You must first ascertain the state of the intestinal secretions, not by inquiry, for this is always unsatisfactory, but by the examination of the state of the tongue, and observing the fecal evacuations for yourself, and then giving a purgative, containing a greater or less quantity of mercury, according to their character; for there are none of these cases which do not require some alterative medicine before you can give tonics with benefit. You will select your tonic according to the state of female health, giving a preference to the various forms of steel if the patient has attained the age of puberty, and the menstruation is not regular and healthy. But if, as in the case before us, the functions of the uterus are duly performed, then I think that small doses of iodine with the iodide of potassium, in a bitter mixture, forms an excellent tonic, though it of course requires to be carefully watched, as, after a time, it occasionally disagrees with the stomach, and must be omitted for some other. I have insisted much on the importance of constitutional treatment, but you must not imagine that this can accomplish all: no patient with distortion of the spine will outgrow it without local treatment. If the disposition to curvature is not arrested, instead of outgrowing the disease, the additional length of the spine will only add to the deformity. "A spine, slightly distorted (says Mr. Shaw), in a growing girl, may be made straight; but if it be neglected (however great may be the attention paid to the state of the health), the curve will become decidedly worse; and if it be permitted to increase to such a degree as to render the ribs angular, it is very doubtful whether a perfect restoration of the form can ever be effected." In speaking of local treatment, the time necessarily allotted to a clinical lecture forbids my entering into much detail; but it is very important to dwell upon the principles which should guide your practice;

indeed, it would be impossible to describe all the measures which might be judiciously employed in each peculiar case. Exercise of the spinal muscles, without fatigue, is the first thing to be thought of; secondly, exercise of the spinal muscles, without calling upon the ligament to sustain the spine in the erect posture; thirdly, giving the muscles greater power to maintain their contractile force; fourthly, reduction of inflammation which has been excited in the ligaments of the spine. Thus the recumbent posture is necessary for the ligaments, the maintenance of the erect posture for the exercise of the muscles; and although these two requisites to the cure appear totally opposed, the judicious surgeon will find many ways of effecting the same principle, though his means may vary. Thus, though he must never confine his patient altogether to a sofa, as the total idleness of the muscles would render them wholly useless, he must enjoin the recumbent posture as the rule in the first instance, and the erect posture as the exception. Mr. Shaw has suggested many excellent, and indeed elegant, contrivances for calling forth the energy of the erector muscles of the spine, for the details of which I must refer you to his admirable work on the Spinal Diseases. The practice of rubbing or shampooing the muscles is of the greatest value, as it improves and accelerates the circulation of blood through their vessels. In the case before us I insisted upon her using the needle with her left hand, as she lay in bed, with a view to exercise freely the spino-scapular muscles. As a local antiphlogistic, there is nothing equal to the moxa, the efficacy of which in reducing inflammation has been clearly shown in the present case. In reference to the treatment of more confirmed cases of spinal curvature, all of which require additional mechanical treatment, I must defer my observations to a future lecture.

ILLUSTRATIONS OF THE PATHOLOGY, DIAGNOSIS, & TREAT- MENT OF OPHTHALMIC AF- FECTIONS.

BY EDW. HOCKEN, M.D. M.R.C.S.L. &c.

[Continued from Vol. ii. 1841-2, p. 173.]

A new and improved plan of treating strumous conjunctivitis. The pathology of struma. The nature and symptoms of the local affection, with the rationale of treatment.

STRUMOUS conjunctivitis is a very frequent and distressing disease of the

eye, which occasions severe distress during its continuance, lasts an indefinite period, and is apt to be renewed from slight variations in climate, or any other exciting cause. Those only who have seen much of this disease, the long time it occasionally lasts, the obstinacy it manifests to common remedies, and the great distress and anxiety it occasions both the patients and friends, can appreciate the value of any plan of treatment which promises almost certain and immediate relief, which occasions no pain in its application, nor requires skill or judgment in its use or repetition. Such a plan of treatment I shall have presently to offer to the notice of my professional brethren, and in doing so, I feel persuaded that there are none who will take the trouble to give it a fair trial who will not bear me out in its great superiority, almost unfailing efficacy, and superior advantages.

Strumous disease is not confined to the conjunctiva, but scrofulous inflammations affect the lids, cornea, aqueous membrane, iris, &c.; hence I object to the term of "strumous ophthalmia," which, from the vague meaning of the latter term, might with equal justice be applied to any of these affections as to strumous conjunctivitis. They are all forms of inflammation modified by the condition of the constitution; and before I proceed to describe the local affection, it will be well to consider briefly the nature of the general state of the system.

Struma, in one form or another, is the most prevalent affection which affects the inhabitants of damp and variable climates. Like many other constitutional diseases, the peculiar form possessed by the parent is almost sure to be handed down to the offspring, or a state of system extremely prone to take on similar diseased actions. This fact, among others, proves that several allied, but more or less dissimilar conditions of constitution, are included under the term struma; for, in fact, a merely predisposed condition of system is, in common parlance, termed a scrofulous constitution—such, for instance, as the fine skin, clear delicate complexion, light hair, large blue eyes, long eyelashes, and precocious intellect, of one form; the dry, harsh skin, lymphatic temperament, soft flaccid condition of the muscles, dulness and

apathy of the mind and body of another; or the foul, dry, swarthy coloured skin, swollen countenance, dark hair, &c. of a third. A true condition of constitutional struma, however, depends, not on any mere physical condition of the body, but on actual contamination of the blood by imperfectly assimilated matter, and this state of the blood is itself dependent upon, and kept up by, a peculiar derangement of the digestive and assimilative organs. Both these pathological elements are concerned in the production of strumous conjunctivitis; the fifth nerve suffers from the propagation of irritation from the ganglionic system of nerves—being referred to its extremity—and the inflammation of the conjunctiva is modified by the strumous condition of the blood.

As I have before stated, so now I repeat, that the manifestations of this constitutional disease are different in different grades of individuals. Tubercular phthisis is thus handed down in a peculiar form of the general cachexia, and this cachexia is generated by adverse fortuitous circumstances, manifesting itself in this and other fragments of a great constitutional disease. But the other and more generally recognized indications of struma are rarely present in the phthisical constitution (such as enlarged glands, upper lip, eruptions, &c.) although the pathology is similar, and the products of diseased action identical. Again, where the lymphatic glands undergo strumous deposition and inflammation, the ears are sore, and the skin is affected with eruptions, then it is that the lids and eyes are subject to attacks of inflammation, &c., of which strumous conjunctivitis forms one of the list.

The reason why particular organs and tissues are, as it were, selected by a disease having so wide a diffusion as the mass of circulating blood, is dependent on an attraction which subsists between such parts and the peccant materials contained in the blood. Not only are these matters attracted by the affected tissues, but sufficiently so to separate them from the blood, and to retain and fix them in connexion with the tissues—subsequent processes ridding the system of their presence altogether. From the abundance of the material, and the constancy with which it is renewed, we can readily understand how so many organs are involved, in

severe cases. In all diseases depending upon a specific virus circulating with the blood, I believe that the local disease is set up by the mutual and elective attraction between the tissue and the poison, the ultimate aim being to eliminate it from the system by subsequent processes. This, for instance, is the case in constitutional syphilis, where the discharges attending its local manifestations are themselves poisoned, although the poison is diluted and less virulent than the discharge of primary sores. Dr. Budd, of Bristol, in his very able and interesting paper* on the Symmetry of Disease, has clearly proved that the essential condition of each individual lesion is dependent on detention of morbid matters, and their being held in union or affinity with the part affected.

All the best modern writers have acknowledged the invariable presence of that condition of the digestive organs which I have stated to be the *origo et fons mali*—the source of that contamination of the blood from whence the local phenomena spring. Dr. Todd† states, that in his opinion (in which Sir James Clark concurs) strumous dyspepsia presented a more characteristic feature of this habit of body than any physiognomical portrait which has yet been drawn of it. For upon whatever temperament the diseased constitution called scrofula engrafts itself, this form of dyspepsia will also there be found; and, therefore, being constantly present with it, preceding and accompanying the various symptoms which issue from it, it would be contrary to all reason to refuse it an important share (nay, the whole share, with the other organs of assimilation) in the development of this disordered habit, and in the production of the local affections which have hitherto too much engrossed the attention, to the exclusion of a proper consideration of the constitutional disease.

The derangement in the abdominal and assimilative organs presents some slight diversity of symptoms in different cases. The abdomen is unnaturally protuberant, and entozoa are very apt to generate in some part of the intestinal canal. The tongue is frequently red at the tip and edges, and the papillæ prominent, whilst the centre is

covered with a slimy greyish mucous coat. At other times the whole tongue is covered with a thin opaque mucous covering, through which the papillæ project; or this is distributed in more or less circular confluent spots, often with a brownish dry streak down the centre in the morning. The appetite for food and drink is very uncertain: the patient is often thirsty, and has a ravenous desire for food. Sometimes, on the contrary, there is great loss of appetite, and unaccountable dislikes and fancies. The bowels are generally confined, alternated with occasional attacks of diarrhœa, depending, probably, on the irritation which accumulated matters in the large intestines ultimately set up. The evacuations are unnatural in smell, colour, and consistence; they have a putrid odour, are of a lightish brown colour, a clayish consistence, mixed with much mucus, undigested or partly digested food, and sometimes blood. There is often pain in the stomach or abdomen. The breath is foul, and there is generally much irritation about the nose, mouth, and sometimes the rectum, so that the child picks and scratches these parts continually, and often occasions unpleasant sores. The urine is pale and abundant, depositing the triple phosphates on cooling. The skin is either harsh, dry, and subject to eruptions, or of a fair waxy appearance, with conspicuous veins; in which latter case there is almost always a slight degree of hectic present, and copious partial night sweats. The sleep is seldom perfectly calm and undisturbed; it is either broken suddenly with a start, or the patient is restless, grinds his teeth, talks, or even screams. The throat is apt to suffer in some cases in an advanced stage, from repeated inflammations, and the tonsils undergo chronic enlargement, and in these also the upper lip enlarges, and the membrane of the nose is almost always engaged. The temper becomes irritable and fretful, and the child cries from slight causes—the superaddition of strumous conjunctivitis greatly augmenting this morbid trait.

Although this is but an imperfect sketch of the pathology of struma, it must suffice for my present purpose, and I will now pass on to consider the phenomena of strumous conjunctivitis, omitting strumous corneitis, &c.

* Med. Chir. Trans. Vol. xxv.

† Cyc. of Prac. Med. Vol. ii., p. 654.

What I have endeavoured to establish in the foregoing remarks may be expressed under the following propositions:—That a physical conformation of body, predisposed to struma, does not necessarily imply a strumous constitution: That a peculiar derangement of the digestive, excretive, and assimilative organs is the first source of the disordered habit: That the pathological element of the constitutional disease consists in a contamination of the general mass of the blood with imperfectly assimilated or tuberculous matter: That local diseases arise from an elective attraction between this matter and the tissues, its separation from the blood, and subsequent processes to eliminate it from the system: That there are distinct varieties of constitutional and local manifestations derived from one source: That strumous conjunctivitis is dependent on a propagated irritation manifested in the fifth nerve, and slight inflammation of the conjunctiva.

Strumous diseases of the eye are rare after puberty, and although I have seen strumous keratitis in a man of 23 years, I have never met with the conjunctival disease before two years, nor after puberty. The disease is sometimes severe and of short duration, especially the first attacks, but after several renewals it is apt to linger in a very chronic form, with frequent augmentations from every exposure to change of weather, or increased derangement of the digestive organs.

Symptoms.—On seeing a child with strumous conjunctivitis, the great intolerance of light, and the firm spasmodic closure of the lids, (photophobia and blepharospasmus) especially attract our attention. The orbicularis palpebrarum keeps up a constant pressure on, and irritation of, the affected membrane, by the severe spasm they constantly suffer when exposed even to moderate light: even the mere action of the light on the lids, and of the small quantity which passes through to the conjunctiva, is unbearable, so that the child leans its face on its nurse's shoulder, or if in bed on the pillow, even in comparative darkness. In chronic cases the edges of the lids are kept in this manner in an almost inverted condition, and the eyelashes get under them, and are thus retained, greatly augmenting the distress. Towards

night there is a remission of these symptoms, and in the darkness the child opens its eyes, and appears altogether much better. I believe that the affection is greatly increased, and maintained almost entirely, by this constant source of irritation, (the spasm of the orbicularis), and that to remove the irritability of the lids and conjunctiva is to cure the disease.

When we come to examine the eye, even in children who strive to assist the practitioner, the greatest difficulty is experienced, and in some cases actual force is absolutely required to separate the lids; a proceeding not calculated to improve the features of the case. The necessary exposure to light occasions a profuse discharge of scalding tears, and, on attempting to raise the lid, it often becomes inverted, whilst the eyeball is rotated out of sight upwards and outwards. If we succeed in fairly viewing the eye, we observe a bundle of vessels forming a cone, with the apex towards the cornea; generally very slight, and frequently terminating in a minute translucent elevation, which is an imperfect vesicle or phlyctenula. There may be several of these in different periods of their progress: some incomplete, others collapsed, and forming a minute depression or dimple; some in a state of ulceration, either slight or severe; and others again having cicatrized, and left a small opaque speck or diminutive albugo. They are situated most commonly at the junction of the cornea and sclerotica, sometimes further in on the cornea, and less frequently on the conjunctiva beyond the cornea. Although slight vascularity is a feature of the less chronic cases, and is beautifully seen when the lids can be quickly separated, as in the sleeping child, or seizing an opportunity when the patient is unprepared, yet if much violence has been resorted to, the eye appears much laden with blood, and the lids very vascular.

The affection commences with vascularity of the lids and great intolerance of light; sometimes much watering of the eye. As the case proceeds, sometimes in a few hours, the local symptoms I have mentioned become developed:—The tears are poured out profusely on exposure to the light, the child cries and complains of pain, and frequently sneezes violently, from the propagation of irritation to the nose

from the branches of the fifth nerve supplying the lids and conjunctiva to the naso-labular branch, which passes into the nose through the cribriform plate of the ethmoid. When phlyctenulæ are present they terminate either in a small transparent depression, termed a dimple, or go on to ulceration of various degrees and severity. These ulcers are generally transparent, and not very deep, but in unfavourable cases, and if not attended to, they will sometimes become funnel-shaped, and penetrate deeply, so as to allow the capsule of the aqueous humour to protrude in the form of a transparent vesicle. The base of the ulcer is placed superficially, diminishing in size as it penetrates the different layers of the cornea. If the destructive process be not now checked the aqueous capsule bursts, the aqueous humour escapes, and frequently a portion of the iris protrudes from the wound, forming what is termed myocephalon, from its resemblance to the head of a fly. The cornea is rendered opaque from the cicatrization, forming small specks where the damage has been slight, denser and larger forms of albugo when more severe, and when the ulcer has penetrated and the iris protruded, an indelible opacity, with a central black speck, or a limited staphyloma from the pseudo-cornea, adherent to the iris, being thrust forwards whilst soft by the aqueous fluid. Strumous opacities of these kinds (excepting the latter), will generally lessen or disappear, after a longer or shorter period, by the natural powers being quickened by an appropriate treatment.

As the attacks multiply, and assume more and more of a chronic form, the child acquires a peculiar physiognomy; the brow is contracted, the cheek, ala of the nose, and angle of the mouth, are drawn up, to protect it in some measure from the light; and from the frequent application of the stimulating tears to the cheek, &c., and the susceptibility of the little patient to take on diseased actions, the face becomes excoriated or covered with eruptions. The scalp, behind the ears, and the external ear itself, often suffer from vesicular or pustular disease in this stage. The eyelashes, as I have mentioned, often become inverted under the lid, and the edges of the lids themselves more or less entropic. The eyes and lids are now much more vascular, and the con-

junctival covering of the cornea frequently thickened and vascular, sometimes so much so as to deserve the name of pannus. One or both eyes may suffer either simultaneously or consecutively. One is, in general, more severely affected than the other, or the severity passes alternately from one eye to the other. It is in the chronic stage that the deeper-seated tissues are occasionally involved.

Pathology.—The intolerance of light in this disease is usually attributed to an affection of the retina, but I believe that the true retina has nothing to do with its production: I think, if we examine its symptoms and cure, we cannot fail to trace it to the ophthalmic division of the fifth nerve solely and exclusively. The fifth (this division) is a nerve of sensation, secretion, and nutrition, supplying common sensibility to the eye, and all the contents of the orbit, and overruling the function of the lachrymal gland. If we ask any physiologist how the muscles of the orbit derive their sensibility, he will reply through the fifth nerve, but that the filaments which actually supply these muscles are unknown. Now I believe that the retina itself is in direct communication with the fifth, through the medium of filaments distributed with those of the optic nerve; not, as Magendie thought, the actual nerve of sight, but as the source of common sensibility to light, and the medium of impressions on the iris through the lenticular ganglion. It is true I can offer no actual anatomical demonstration of this opinion, but in this I am not singular, as in the case of the muscles just alluded to; nevertheless I will proceed to show my reasons for thinking so. If a small foreign body, as a grain of sand, get between the upper eyelid and globe, a temporary condition, very analogous to strumous conjunctivitis, is induced: the patient manifests the greatest intolerance to light, the orbicularis palpebrarum is affected spasmodically, *the pupil contracts to a fine point*, and the eye waters profusely. When we come to examine it we find the eye turned greatly upwards, and the same difficulty with the orbicularis. Now, in this case, it is obvious that all the symptoms depend exclusively on an irritation of some filaments of the ophthalmic division of the fifth nerve. But it is equally clear to my mind that although the fifth nerve

private Chinese and Japanese museum; a museum of antiquities (principally Egyptian and Etruscan objects) and a rich well-arranged anatomical and pathological museum, occupying the ground-floor of a neat edifice; the first floor of which contains the library of the university. The university building is a plain structure, surmounted by a dome, containing a saloon, decorated with portraits of former professors, and an examination room. Adjoining is a large and handsome botanical garden, in which are several specimens of rare plants from Java and the Dutch colonies. A separate portion is appropriated to medicinal plants. The number of students at the university amounts to about six hundred, of which one-third attend the medical classes.

The following are the names of the professors of the medical faculty:—Rector, G. Van der Hoeven, who is also professor of comparative anatomy and physiology. Anatomy and physiology, Sandifort. Special therapeutics and pharmacy, Macquelyn. Surgery and obstetrics, Broers. Pathology and practical medicine, C. Pruy Van der Hoeven.

For the first time since I have travelled upon the Continent met here with obstacles to my seeing the hospitals; and the same appeared to have been the case with other medical visitors. Dr. Varrentrapp, of Frankfort, in his "Medical Journey through England, Holland, and Belgium," says "I could not see the town hospital, which also serves as a refuge for the insane.

Physicians are obliged to their assistants to let me see the hospital, and about a week ago, I was in it,

generality of the progress of science in other countries; and the name of any celebrated Dutch scientific or medical character of modern times is rarely heard of in the rest of Europe.

Some opinion may be formed as to matters in Leyden, more especially from the circumstance that, till lately, syphilitic patients were not admitted to be treated in the hospital, as it was considered that the complaint was a just punishment of the sufferer's wickedness. A few, however, of these patients are now received at the clinical hospital.

The *Hague* contains a population of about 40,000 inhabitants, and two hospitals, besides one for the insane. The town hospital is a neat building, with 100 beds, arranged in clean and airy wards of ten or twelve in each, for the reception of medical and surgical diseases. Attached is a garden where convalescents take exercise, and in which was erected, during the prevalence of the cholera, a small building for patients affected by the epidemic, or by contagious diseases. The professional duties are performed by a physician and a surgeon. The other hospital, *Ziekenhuis*, contains about the same number of beds, and is appropriated to the reception of syphilitic diseases, psora, and other chronic cutaneous affections. About three-fourths of the patients are syphilitic: the physician, having also the superintendence of the public women in the town, immediately sends any one who is infected to the hospital. The most usual remedy employed to combat secondary symptoms is the oxymuriate of mercury. In cases of psora, sulphur internally exhibited, and used in the form of ointment, is the usual remedy; tepid baths are likewise a good deal used in this hospital in the treatment of cutaneous diseases. The house for the insane contains about sixty patients, two-thirds of whom are females, and is situated on the first floor, the cells, for the most part, are small, and damp, on the ground floor, and violent patients are confined in their cells, which are guarded by soldiers, and the doors for the patients are most carefully guarded. Most of the patients are

isolated cells for the more refractory. The number of superintendents is only six—four females for the women, and two men for the male patients. The *carnisole* is the usual means of restraint. No special treatment is adopted, nor are the patients engaged in any methodical occupation. There is a small garden attached to the house, in which the more tranquil ones are allowed to take exercise.

The Hague being the seat of government, the organization and interior arrangement of the hospitals, as well as the treatment of disease, are better than in other parts of Holland, with respect to which I am, perhaps, scarcely justified in passing a judgment, from the brief period of my sojourn in the country. But for any one who has been much in the habit of visiting a variety of medical institutions, a long time is not needed to perceive that medicine and surgery are in a very backward state in Holland; and I find this opinion corroborated by Dr. Varrentrapp, who remarks in his work, that although there are doubtless many well-informed, scientific, and even learned men, among the Dutch physicians (of which the rich anatomical and pathological collections, well kept up to the present time in some parts, may be considered a proof) yet that the hospital physicians and practice fell much below his expectations; the visits being made, in some places, by the physician with his hat on, and a cigar in his mouth (this smoking in the wards I did not see, and some of the physicians in the Parisian and other hospitals wear their hats during the visit), which he takes out to ask the patient two or three questions—marking the number of the bed opposite the printed formula in the attendant apothecary's books. Cases are not taken except at the clinical hospitals, and but little interest appears to be taken in the patient in a scientific or other point of view. This indifferent medical organization and practice is

attributed by Dr. Varrentrapp to the absence of there being no efficient authority to superintend the affairs of the medical institutions, as in England, superintendents or inspectors of towns; or

tants, who, for the most part, take but little interest in the control of aught else than the financial matters: to this cause, and to the attachment of the Dutch to old habits, and their dislike to innovation, may, then, be attributed the backwardness of the medical sciences in Holland.

October, 1842.

VESSELS OF THE PLACENTA.

To the Editor of the Medical Gazette.

SIR,

By permitting me, through the medium of your Journal, to make the following statement, you will much oblige
Your obedient servant,

JOHN REID.

Univers. of St. Andrew's,
Nov. 1, 1842.

In a communication "On the Anatomical Relations of the Bloodvessels of the Mother to those of the Fœtus in the Human Species," which I made to the British Scientific Association during its meeting in Glasgow in 1840, and which was afterwards printed in the 146th number of the Edinburgh Medical and Surgical Journal, a remark is contained which I am anxious publicly to correct. It is mentioned in a footnote, in the paper referred to, that I believe that the representation of the manner in which the fœtal placental vessels are distributed, given by Wagner, in his *Icones Physiologicæ*, fascic. i. b. xi. fig. 2, and stated to have been furnished by Weber, is far from being correct." I had lately the satisfaction of visiting Weber, and he not only very kindly shewed me all his preparations, but gave me some portions of his beautifully injected placenta; and from an attentive examination of these, I am now perfectly satisfied that the representation he has given of these vessels is entirely correct. In alling in question the correctness of Weber's representation, I was at the time under the impression, from an examination of the engraving mentioned (which, however, a greater degree of attention paid to fig. 3 might have corrected), that it was meant to imply that the corresponding artery and vein did not run enclosed in the same sheath, but were sometimes coiled about apart from each other; for, being

produces contraction of the pupil *per se*, still under ordinary circumstances the light must fall on the retina to occasion this change. The experiments of Fontana prove that the mere action of light on the iris is insufficient to produce contraction of the pupil, unless the retina be simultaneously affected. But daily observation also proves that if the fifth nerve be in a state of irritation the action of the light on the eyelids alone is amply sufficient to produce the same effects. The experiments of Magendie also tend to confirm the opinion of the function and communication of the fifth nerve, and not, as he imagined, that it was the true nerve of vision; for although the retina was apparently insensible to an intense light from division of this nerve, it does not necessarily follow that the animals were blind. His experiments were performed on rabbits, in whom division of the fifth nerve produces contraction of the pupil; and even here, when he admitted solar light, and concentrated it on the retina by a lens, the animal closed its lids. In some very ingenious and interesting remarks, Mr. Walker* has shown that, under similar circumstances, only sensibility to light is lost, but not the proper functions of the retina. In a patient of his, all the parts supplied by the fifth nerve were paralysed on one side of the face; and in this case there was a striking difference in the sensibility of the two eyes to light. The healthy eye could not bear the same amount of light for a single instant which produced no impression on the eye of the paralytic side: the flame was distinctly visible to the eye, but it produced no irritation. Again, where persons are quite blind, sensibility to light often remains.

Cases of complete amaurosis are occasionally met with where the iris moves with activity and freedom, and where the patients can tell by their sensations the difference between light and darkness, without being able to see at all. These cases appear to dissect, as it were, the different portions of the retina, and show its separate functions—the true retina is paralysed by disease in some part of the visual nervous system, whilst the sensitive function of the fifth, and the motor functions of the third nerves remain intact.

It is clear, therefore, that the intolerance of light, the spasmodic closure of the lids, the profuse lachrymation, the contracted state of the pupil, and the involuntary efforts to exclude the light, in strumous conjunctivitis, are not dependent on any derangement in the state of the retina itself, but on irritation of the various filaments of the fifth nerve which supply these parts, including the retina. And that this is the true pathology of the affection those cases show, where all these symptoms are present without phlyctenulæ or any notable redness; and, moreover, as I shall presently show, that to remove the great susceptibility of this nerve is to cure the disease.

I shall omit the consideration of causes, diagnosis, and prognosis, and pass on to treatment, merely remarking that some accidental increase of the permanent disturbance of the intestinal canal, or the induction of derangement in the eye from common causes—especially atmospheric vicissitudes—excite or establish the ophthalmic affection.

15, Southampton Street,
Covent Garden.

[To be continued.]

OBSERVATIONS ON PUS AND MUCUS.

To the Editor of the Medical Gazette.

SIR,

THE insertion of the following observations in your valuable periodical will oblige, sir,

Your obedient servant,

JOHN W. GRIFFITH, M.D.F.L.S.

9, St. John's Square, Nov. 5, 1812.

The mode of distinguishing pus from mucus has occupied the attention of so many authors, and so many pages have been devoted to its consideration, that any further observations at first sight appear unnecessary. In diseases of the chest, now that the physical examination of that cavity by auscultation and percussion renders us so certain of the disease within, assistance is rarely sought for from either the presence or absence of mucus or pus in the expectorated matter. My object here is to notice one or two of the proposed methods of distinguishing one from the other, and

* Philosophy of the Eye, p. 276.

to attempt to show the true relation of pus to mucus. Pus when pure is composed of two kinds of globules floating or suspended in a liquid containing free albumen. The first of these globules are granular on the surface, and much larger than the second, and when acted upon by acetic acid the external part is dissolved, leaving nuclei, varying in number, undissolved; the smaller globules are smooth and transparent, and unaltered by acetic acid. Mucus is composed, as described by Mandl*, of globules undistinguishable from pus, irregularly diffused through a viscid tenacious mass which appears itself composed of numerous very minute granules aggregated into amorphous masses, mixed with some very transparent small globules. The larger globules of mucus seem to me undoubtedly to vary in size according to the density of the medium in which they are contained: thus in the ordinary fluid mucus of the nose they are smaller and appear more granulated, whilst in the urine they are generally larger and less granulated, and of a paler colour, seeming as if distended with fluid. Mixed with the various globules in mucus we have abundance of epithelial scales and cells. The viscosity and tenacity of mucus, varying in intensity from the saline watery mucus secreted in acute bronchitis to the almost solid masses sometimes secreted in the latter stages of phthisis and calculous disease of the bladder, is very characteristic, and is worthy (in a diagnostic point of view) of much more attention than it ordinarily receives. It is never found in pus. The fluid part of mucus does not contain free albumen, but it exists in some unknown combination: its presence has been proved by electricity.† That variety of morbid secretion termed muco-pus is composed of a large number of *pus globules* suspended in a mucous fluid: there is no true pus secreted in these cases, *i. e.* globules and an albuminous vehicle, but the genuine pus globules in the true mucus. The iron, whose presence in pus has been considered as characteristic, exists in the fluid of pus, not in the globules; therefore it is not present in muco pus. I have often been surprised, in examin-

ing the expectorated "purulent" matter in the last stage of phthisis, where there is an enormous progressing ulcerating surface, and when we should expect a large quantity of true pus to be secreted, at not finding more than a trace of free albumen; although the pus globules were abundant. I believe that Gueterbock is perfectly correct in stating* that free albumen is not secreted by mucous surfaces except they be ulcerated; therefore that pus is not secreted unless under the same circumstances. Pus, when contained in urine, falls to the bottom, and forms a bran-like layer, which by stirring is readily diffused throughout the liquid, again subsiding by repose: the urine under these circumstances becomes albuminous. Wherefore, when this sediment is examined by the microscope, the globules are found in great abundance. Mucus by repose falls also to the bottom of the vessel, but by stirring cannot be diffused through the urine like pus, but retains its peculiar viscid gelatinous appearance. When this sediment is examined by the microscope, the globules are few, and separated by the tenacious fluid. The test proposed by Dr. Young to distinguish pus from mucus shews the fallacy of detecting any one constituent of pus. As is well known he proposed producing the coloured rings, by placing the suspected matter between two glass plates, and holding it near the eye, and between it and a candle. These rings are however readily seen in muco pus when the globules only are present. The recognition of pus by the detection of its fatty matter, as proposed by French authors, would also be equally fallacious.

ON

DUTCH MEDICAL INSTITUTIONS.

By EDWIN LEE, Esq.

(For the London Medical Gazette.)

[Continued from p. 146.]

LEYDEN is a handsome town, and, though numbering 40,000 inhabitants, is remarkably quiet. It contains the chief university of Holland, and three or four highly interesting museums, viz. a large museum of natural history; a

* Mandl, L'Experience, vol. 2, 1838.

† For some valuable observations on this subject, see Guy's Hospital Reports, vol. 3, p. 35. "Dr. Bird on Mucous Purulent Secretions."

* Translated memoir, "On pus and granulation."—L'Experience, vol. 1, 1837.

private Chinese and Japanese museum; a museum of antiquities (principally Egyptian and Etruscan objects); and a rich well-arranged anatomical and pathological museum, occupying the ground-floor of a neat edifice; the first floor of which contains the library of the university. The university building is a plain structure, surmounted by a dome, containing a saloon, decorated with portraits of former professors, and an examination room. Adjoining is a large and handsome botanical garden, in which are several specimens of rare plants from Java and the Dutch colonies. A separate portion is appropriated to medicinal plants. The number of students at the university amounts to about six hundred, of which one-third attend the medical classes.

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For the first time since I have travelled upon the Continent I met here with obstacles to my seeing the hospitals; and the same appears to have been the case with other medical visitors. Dr. Varrentrapp, of Frankfort, in his "Medical Journey through England, Holland, and Belgium," says, "I could not see the town hospital, which also serves as a receptacle for the insane. The physicians, out of regard to their reputation, would rather not let me see it, for it is truly in a miserable and abominable condition. Not very long ago, the male and female patients lay in it, mixed up together." Although I had made a request the preceding evening, and was at the clinical hospital at the time when the surgeon had finished his lecture—notwithstanding I sent up my name—he declined seeing me, appointing me a late hour in the day at his residence, though I had stated that I was obliged to leave at noon.

The only inference to be drawn from this is, that there must be much to conceal; and, in fact, the medical and surgical practice throughout Holland appears to be in a very backward state. Few foreign medical works are imported; but little is known by the ge-

nerality of the progress of science in other countries; and the name of any celebrated Dutch scientific or medical character of modern times is rarely heard of in the rest of Europe.

Some opinion may be formed as to matters in Leyden, more especially from the circumstance that, till lately, syphilitic patients were not admitted to be treated in the hospital, as it was considered that the complaint was a just punishment of the sufferer's wickedness. A few, however, of these patients are now received at the clinical hospital.

The *Hague* contains a population of about 40,000 inhabitants, and two hospitals, besides one for the insane. The town hospital is a neat building, with 100 beds, arranged in clean and airy wards of ten or twelve in each, for the reception of medical and surgical diseases. Attached is a garden where convalescents take exercise, and in which was erected, during the prevalence of the cholera, a small building for patients affected by the epidemic, or by contagious diseases. The professional duties are performed by a physician and a surgeon. The other hospital, *Ziekenhuis*, contains about the same number of beds, and is appropriated to the reception of syphilitic diseases, psora, and other chronic cutaneous affections. About three-fourths of the patients are syphilitic: the physician, having also the superintendence of the public women in the town, immediately sends any one who is infected to the hospital. The most usual remedy employed to combat secondary symptoms is the oxymuriate of mercury. In cases of psora, sulphur internally exhibited, and used in the form of ointment, is the usual remedy; tepid baths are likewise a good deal used in this hospital in the treatment of cutaneous diseases. The house for the insane contains about sixty patients, nearly two-thirds of whom are females, who are lodged on the first floor, the men occupying cells, for the most part small, badly lighted, and damp, on the ground-floor. The violent patients scarcely ever leave their cells, which are kept shut; an aperture, guarded by a grating, being left in the doors for ventilation. The quieter patients assemble in a refectory at meals. Most of the women sleep in rooms containing four and two beds; there are, however,

isolated cells for the more refractory. The number of superintendents is only six—four females for the women, and two men for the male patients. The *carnisole* is the usual means of restraint. No special treatment is adopted, nor are the patients engaged in any methodical occupation. There is a small garden attached to the house, in which the more tranquil ones are allowed to take exercise.

The Hague being the seat of government, the organization and interior arrangement of the hospitals, as well as the treatment of disease, are better than in other parts of Holland, with respect to which I am, perhaps, scarcely justified in passing a judgment, from the brief period of my sojourn in the country. But for any one who has been much in the habit of visiting a variety of medical institutions, a long time is not needed to perceive that medicine and surgery are in a very backward state in Holland; and I find this opinion corroborated by Dr. Varrentrapp, who remarks in his work, that although there are doubtless many well-informed, scientific, and even learned men, among the Dutch physicians (of which the rich anatomical and pathological collections, well kept up to the present time in some parts, may be considered a proof) yet that the hospital physicians and practice fell much below his expectations; the visits being made, in some places, by the physician with his hat on, and a cigar in his mouth (this smoking in the wards I did not see, and some of the physicians in the Parisian and other hospitals wear their hats during the visit), which he takes out to ask the patient two or three questions—marking the number of the bed opposite the printed formula in the attendant apothecary's books. Cases are not taken except at the clinical hospitals, and but little interest appears to be taken in the patient in a scientific or other point of view. This indifferent medical organization and practice is ascribed by Dr. Varrentrapp to the circumstance of there being no efficient governing body to superintend the administration of the medical institutions, which are either, as in England, supported by private subscriptions or bequests, or else belong to the towns; the direction being confided to six or eight of the more influential inhabi-

tants, who, for the most part, take but little interest in the control of aught else than the financial matters: to this cause, and to the attachment of the Dutch to old habits, and their dislike to innovation, may, then, be attributed the backwardness of the medical sciences in Holland.

October 29, 1842.

VESSELS OF THE PLACENTA.

To the Editor of the Medical Gazette.

SIR,

By permitting me, through the medium of your journal, to make the following statement, you will much oblige

Your obedient servant,

JOHN REID.

University of St. Andrew's,
Nov. 1, 1842.

In a communication "On the Anatomical Relations of the Bloodvessels of the Mother to those of the Fœtus in the Human Species," which I made to the British Scientific Association during its meeting in Glasgow in 1840, and which was afterwards printed in the 146th number of the *Edinburgh Medical and Surgical Journal*, a remark is contained which I am anxious publicly to correct. It is mentioned in a footnote, in the paper referred to, that I believe that the representation of the manner in which the fœtal placental vessels are distributed, given by Wagner, in his *Icones Physiologicæ*, fascic. i. tab. xi. fig. 2, and stated to have been furnished by Weber, is far from being correct." I had lately the satisfaction of visiting Weber, and he not only very kindly shewed me all his preparations, but gave me some portions of his beautifully injected placenta; and from an attentive examination of these, I am now perfectly satisfied that the representation he has given of these vessels is entirely correct. In calling in question the correctness of Weber's representation, I was at the time under the impression, from an examination of the engraving mentioned, (which, however, a greater degree of attention paid to fig. 3 might have corrected), that it was meant to imply that the corresponding artery and vein did not run enclosed in the same sheath, but were sometimes coiled about apart from each other; for, being

taken from a dried preparation, the sheath or villus in which they are enclosed is not represented, and I had not then seen Wagner's *Lehrbuch der Physiologie*, containing a detailed description of these; and it was this supposed error which led me to make the above criticism. If I had supplied, in fig. 2, by the aid of my imagination, the walls of the villus surrounding the convoluted artery, and its accompanying vein, I could not then have questioned its accuracy; for I was maintaining, as the result of my own examinations, that they were enclosed in the same sheath. I make this explanation, not so much from the importance of the subject, for it relates merely to a minor question of anatomical detail, but having, though chiefly from a misapprehension, erroneously called in question the accuracy of an observation made by a most distinguished anatomist and most estimable man, I feel anxious to correct the error.

MEDICAL GAZETTE.

Friday, November 18, 1842.

"Licet omnibus, licet etiam mihi, dignitatem Artis Medicæ tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

ON MEDICAL STATISTICS.

THE taste for statistical information upon various subjects has of late years increased in a remarkable degree. During the present century, this feeling has been gaining ground more rapidly than it ever did before, and a powerful impetus was given to it in 1834 by the formation of the Statistical Society in London, the object of which was to call the attention of the public in general, and the cultivators of science in particular, to the necessity of directing their exertions in this channel. It has enlisted many active and talented labourers, by whose industry much valuable information has been already communicated; and it has also been the means of diffusing abroad more widely the desire

to collect and compare facts in a statistical manner, with the view of deriving more accurate conclusions from them. Since the formation of this society, others of a similar nature, and professing the same object, have arisen in various provincial towns; for instance, one was commenced at Leeds in 1833, another at Glasgow in 1836, besides those which have for some time existed at Manchester, Bristol, &c.

The science of medicine has not been neglected by the members of these societies, many of which have had a separate medical section to suggest and superintend researches in this department, and all have contributed, more or less directly, additions to the stock of our knowledge on medical subjects. In 1833, moreover, a statistical section was formed, in the British Association, expressly for the advancement of medical science.

It may be said of medical science that it is, in a greater degree, perhaps, than any other, dependent for its real advance on the judicious assortment of accurately and extensively collected facts, and of inferences carefully deduced from them. It is in this way alone that we hope to make satisfactory progress, and the want of information of this sort has long been deeply felt by all who are anxious to obtain rational views of diseases and their treatment. Medicine is essentially and peculiarly a science of facts. This is agreed on all hands in its fullest degree: every one thinks so, every one says so, and every one professes to be guided by the sentiment, and to take facts as the basis of his reasoning. But, unfortunately, persons in their eagerness to rest upon facts are not always sufficiently careful in their choice of them. There is something imposing in the term which gives for whatever is so denominated an unreflecting belief. According to the popu-

lar adage, a fact is a stubborn thing—it seems to imply something obvious and tangible, something which cannot mislead, and in opposition to which all reasoning is useless. Such a persuasion would produce a very good effect were all alleged facts truths, but this is confessedly far from being the case, and medical facts have been by no means remarkable for uniformly maintaining this high character. On the contrary, too many can but ill bear an accurate examination. They have been in so many instances too quickly assumed and too readily credited, and are consequently so often falling into disrepute, and giving place to others equally incorrect, that it has been sarcastically remarked nothing can be less deserving of credit than medical theories, except medical facts.

One great cause of this acknowledged imperfection in medical facts is doubtless to be found in the difficulties which beset the subject, arising from the great variety of circumstances to be weighed in the investigation of each disease, as depending on individual constitution, peculiarity of climate, epidemic, &c., and the consequent good judgment and extent of experience which is required to select respectively those circumstances which are essentially connected with the disease, and those which are dependent on the peculiarity by which its course is modified. A correct idea of a disease cannot be formed by taking a narrow view of it, and by seeing it only under certain circumstances, but by observing it extensively in all its different characters. The difficulty of obtaining satisfactory information in this wide field has been so great as to make persons shrink from the attempt, and has unquestionably been the motive for the adoption and long belief in the many so-called facts in medicine, which by further experience and more close in-

vestigation are daily shewn to be erroneous.

But this very difficulty of the subject, this necessity of extending widely the range of observation in order to obtain satisfactory results on each particular branch, calls only for a larger number of labourers, and should act as a stimulus to their exertions. Every accurately-detailed fact, however plain, however devoid of novelty, is in itself valuable: it is something added to the general mass, and plays its part in assisting towards an approximation to the truth, and in clearing away those clouds of mystery and uncertainty which have so long darkened the horizon of medicine. It is not from the communication of new and striking cases, though they are unquestionably of high value, so much as from the careful registration of ordinary facts which are every day passing under the eye of each individual, that important results are to be anticipated. The aggregation of numerous analogous facts frequently elicits unexpected decisions, and often falsifies the conclusions of unrecorded experience; and the results of practice are very differently impressed upon our minds when deduced from a careful registry of the facts which have passed before us, than when drawn from the dim chambers of unaided memory. If but a few practitioners annually published the details of their experience, in an uniform and comprehensive style, how great an amount of information would soon be collected upon various subjects, and how soon would be swept away many of those vague theories and equally uncertain facts which now fetter the minds of practitioners, narrow their views of disease, and embarrass them in their rules of treatment.

It may be asked from what sources this statistical information is to be obtained most easily and with the greatest degree of certainty? The answer to

this would, of course, be—from the hospitals, large and small, in various parts of the kingdom. At the same time, we are compelled to say that this soil, so excellent in quality, has been allowed to lie comparatively fallow and unproductive. Rarely do we see a statistical report at all of the cases admitted into a hospital, and, still less frequently, any thing like an accurate or serviceable one.

And, hitherto, much as we have reason to be proud of the charitable munificence of our nation, and of the unparalleled amount of her voluntary contributions for the maintenance of hospitals for the sick poor, it must be deplored that, with facilities greater than those of any other country, we are inferior to some of our continental neighbours in the precision and punctuality with which they conduct the statistical department of their various medical charities.

It is deplorable to reflect on the great mass of information which in these institutions is literally squandered away, for the want of a little management and a little trouble in collecting it. It is true we have of late seen, now and then, in the public journals, a solitary report or two from the medical officer of an infirmary or hospital, and we rejoice at being able to allude even to these few feeble attempts, as they show that a feeling is beginning to arise of the propriety, we may almost say duty, of those persons who are connected with institutions of this sort collecting and rendering available the scattered materials they present.

It has been one great object with the medical division of the statistical society to effect improvement in this respect; some good results have already been produced, and we trust their efforts will be followed by further improvements. Convinced of “the importance of applying the instruments and

methods of inquiry which have enriched the exact sciences, to vital phenomena,” the committee for prosecuting researches into this department issued some time ago a blank form to the medical officers of several of the London hospitals, and it appears that returns have been made from the Westminster, Middlesex, Charing-cross, King’s College, University College, London, and Dreadnought hospitals. Some of the results of their exertions we published in a former number. It would be premature, of course, to express an opinion of the probable success of their undertaking, but they appear to have started well, and we hope that the medical officers of other hospitals will not be slow to assist them in forwarding their views, and that some uniform method of registering cases may be adopted. Some such principle is sadly required in the metropolitan hospitals, for they have perhaps been comparatively less productive than any others of information of this sort.

While, however, we express our sense of the value of statistical information, as a means of ascertaining various points in medicine, and sweeping away some of the unsatisfactory and ill-founded dogmas which have so long misguided us, and still exert a powerful influence over our opinions, we are not inclined to assent to the opinion of those who fancy that the science and practice of medicine can be reduced to a sort of mathematical certainty and infallibility. So long as men present the same physical and constitutional varieties as at present, it is to be feared that the diagnosis and treatment of their diseases will scarcely be reduced to any such desirable precision.

Unless extreme attention be paid to the accuracy of the details from which statistical results are drawn, they must become positively injurious, in proportion to the weight of authority

which they possess. A statistical return must not be, as we fear is sometimes the case, a cloak for hiding the inaccuracies of a number of collected facts; in order to be of any use at all, it must be of such a nature that each of its details will bear the strictest scrutiny.

A difficulty arises, too, from the various appellations by which different trains of symptoms may be designated. How many terms, for instance, may be used to express the protean disorders of the digestive organs!

These and other difficulties of the same nature must induce those who are inclined to labour in this field of inquiry to do so with earnestness and diligence: they must not fancy that they are conferring a boon on science by producing a jumble of questionable facts, shielded beneath the imposing title of statistical report. Their first endeavour should be to record their observations in a regular and systematic manner, and then to arrange them according to some general rule which seems most convenient.

Hitherto those who have given attention to this subject have been contented with the attempt to ascertain general facts, to point out prevalent forms of disease in certain places, ages, and constitutions, and to ascertain the average rates of mortality in various affections. This is no doubt extremely valuable information, as bearing upon the main causes of disease, and their mode of prevention; and the benefit of it has already in some instances been shown. But we hope soon to see another, and perhaps more useful, though unquestionably more difficult branch of the subject, more fully entered upon: we allude to the statistics of individual diseases, their symptoms, causes, and modes of treatment. Such would be the most effectual way in which each individual can transmit

to others the results of his own experience; and it is from collected facts of this sort that we may expect the science of medicine to be in future most surely advanced. Our neighbours abroad have entered upon this course; and every one who is acquainted with the present medical literature of France and Germany knows the advantage they are deriving from it in those countries.

BRITISH MEDICAL ASSOCIATION.

A MEETING of this society took place last week at the British Coffee House: Dr. Webster, of Dulwich, in the chair.

The Chairman, Dr. Grant, of University College, Dr. Marshall Hall, and one or two others, made speeches; but they all "hung fire" most lamentably, and the meeting proved a complete failure; as will be seen by the letter of one of the members, which we subjoin. Professor Kidd and Sir James Clark were elected honorary members; and of the profession in the United Kingdom, on this great occasion of the annual meeting, no fewer than *two* were added to the list of ordinary members!

The only thing during the evening, worth listening to, was the oration of Mr. Grainger, which we gave at full length last week.

To the Editor of the Medical Gazette.

SIR,

ON Tuesday evening last, the members of the British Medical Association held their sixth annual meeting at the British Coffee House, Cockspur-street, and notwithstanding the low price of their cards of admission (3s. 6d.), there was, compared with their former anniversary reunions, a great falling off in numbers, and in the interest which their proceedings seemed to excite. Instead of a long list of candidates for admission, two only were announced; and in vain the perpetual president, Mr. Webster, repeatedly requested the ordinary members to take part in the proceedings, stating that the council, in their great condescension, had left some of the

resolutions to be seconded by those in the ranks: the ordinaries, mindful of supercilious bearing on the part of the president on former occasions, responded not to the gracious permission.

Many persons, deeply sensible of the disadvantages under which our general practitioners labour,—of their state of isolation and non-representation,—of their want of protection and corporate influence, have expressed surprise that this association should have received from them so little patronage and support; that out of thousands of members scarcely one hundred have joined it. Dr. Marshall Hall, in a sensible speech during the evening, particularly dwelt on this topic; but the truth, I believe, is, the great body of surgeons hold aloof from the society, not from apathy, but from a well-founded conviction of its faulty organisation and management, and of its total inadequacy to advance the cause of genuine medical reform,—“Non tali auxilio nec defensoribus istis.” In vain the general practitioners of this country look to this association for a realization of the representative principle, as in truth the only persons there represented are the members of the council, who, from the commencement of the society, have regularly elected each other; and this accounts for several obscure individuals continuing to be re-elected from year to year, solely because they happened to be on the first council,—individuals who, however worthy and useful they may be in the circles in which they move, must themselves be conscious that they are very inadequate representatives of either the talent or respectability of the profession, and who, had they been equally studious of advancing the cause of the association as of indulging their *amour propre*, would long since have retired from a post which they were not qualified to occupy, to make way for abler and more influential men.

The council comprises one-third of the association; they form a compact body, accustomed to meet, and are well known to each other: at the termination of their year of office, therefore, each has only to vote for his thirty-five associates to render the return of them all a matter of perfect certainty; because the sixty or seventy ordinary members are unknown to each other, without union or concert, and very

many of them take no interest whatever in the annual election of the council, from a well-founded conviction that, organised as the society is at present, any attempt on their part to oppose the usurping party would be useless and unavailing. Hence, in reality, there is no representation in the British Medical Association, the officers and council being as regularly self-elected as those of the much-abused London College of Surgeons; and hence the reason why many respectable and talented practitioners have after a time withdrawn their names, disgusted and disappointed. In order to introduce fairly the representative principle into the Association, and to make it, not as it has hitherto been, a delusion, but a reality, it should be a rule that the council for the current year should have no voice in the election of their immediate successors,—or a part, one-third, or a half, should be ineligible for the year ensuing. But instead of contemplating any reform of this kind, I believe that to propose such to the dominant party would be quite sufficient to taboo any of the ordinary members.

An independent member is almost powerless as to effecting any alteration in the constitution of the Association, as it is one of the rules that notice in writing of a proposition for change must be sent to the secretary a month previously to the March meeting. Thus the whole power of the council would be organised against any motion disagreeable to them; and from what I have heard and observed of their animus, I believe the mere circumstance of an improvement emanating from one of the ordinary (as all those not of the council are politely termed) would be quite sufficient to elicit the hostility of the governing body.

With all its faults, however, the British Medical Association has made some moves in the right direction; and had its organization and management been less defective, would, I believe, at present have been a powerful, numerous, and flourishing body. But an association of medical men, single-mindedly studious of benefiting the public, and of elevating and ameliorating their profession—free from party politics and from paltry cliquism—based on broad and general principles—fairly and honestly recognising the

representative principle, has yet to be formed. Let but such arise, and I venture to predict there will be no apathy on the part of general practitioners in joining its ranks; and as they are enlightened as to their grievances, and determined to remove them, and deeply sensible of their unjust exclusion from corporate influence, so will speedily their talents and weight and influence be brought to bear successfully and irresistibly against the strong holds of monopoly and corruption.

I am, sir,

Your very obedient servant,

JAMES LEESON.

Finsbury Square, Nov. 11, 1842.

LIFE ASSURANCE FEES TO MEDICAL REFEREES.

A MEETING of the following medical practitioners of this town was held at the Lion Hotel, Shrewsbury, on the 25th of October:—Dr. H. Johnson, Mr. Arrowsmith, Mr. W. J. Clement, Mr. Dickin, Mr. Clarke, Dr. Drury, Mr. Gill, Mr. Wood, Mr. Griffiths, Mr. Keate, Mr. Onions, Mr. Bratton, Mr. Cartwright, Mr. Crawford, Mr. Heathcote, and Mr. Foulkes. In consequence of the unavoidable absence of Rice Wynne, Esq. Dr. Johnson was called to the chair, and having briefly explained that the object of this meeting was to adopt some resolution respecting the payment of fees by Life Assurance Companies—

Mr. Cartwright rose and proposed a resolution to the effect that they pledged themselves not to answer the inquiries of Insurance Offices, unless accompanied with a fee of one guinea. It was evident, he said, from the frequent publications in various periodicals, and from the present meeting, that the system adopted by Insurance Offices of obtaining medical certificates was practically wrong, founded on erroneous, and, in his opinion, dishonest principles; at any rate, the system was highly offensive to the feelings and injurious to the interests of the profession. As the Offices had not acted in a conciliatory spirit, but had uniformly met their remonstrances with indifference and slight, surely they had a right, and ought, in self-respect, to pass such regulations as might conduce to their own convenience and interests. He then drew their attention to the distinction between a medical referee and a medical attendant. The medical referee was appointed by the Offices, was their agent, and was paid by them; whilst the medical attendant was made, by a rule of the Offices, the agent of the ap-

plicant, and was scarcely ever paid for his services.

[Mr. Cartwright next proceeded to make various apposite remarks, which want of room compels us to omit.]

Mr. W. J. Clement seconded the resolution, expressed his cordial concurrence with the sentiments of the proposer, and trusted they would all see the advantage of acting with unanimity on that most important subject.

A desultory conversation then ensued, during which it was stated, that the London, Edinburgh, and Dublin Office paid £1. 1s. in all cases to the medical attendant, as well as to the medical referee: the Britannia, the Protestant Dissenters and General Life Assurance Company, the Commercial and General Life Assurance Company, and the National Provident Institution, and several other offices, were, in some instances, in the habit of paying the medical attendant.

The resolution having been unanimously carried, the pledge was immediately signed by each gentleman present.

Mr. Cartwright was then appointed hon. secretary to the Association, and requested to send a circular to all the practitioners in the county, soliciting their assent to the above resolution. Thanks were then voted to Mr. Cartwright and Dr. H. Johnson, respectively; to the former for his zeal and activity in obtaining much valuable information, which had materially contributed to the success of the meeting, and the latter for his able services as Chairman.

The following gentlemen, who were unable to attend the meeting, have since signed the resolution—Mr. Wynne, Mr. Clement, Mr. Piddock, and Mr. Stevens.

MIDDLESEX HOSPITAL.

Extirpation of a fatty tumor from the neck.

JOHN HILL, æt. 54, was admitted under Mr. Shaw, with a tumor on the left side of his neck. It was situated in the space between the sterno-cleido-mastoideus and the trapezius, and reached from behind the mastoid process of the temporal bone to the middle of the clavicle. Its form was oval, and slightly lobulated. It projected, at its most prominent part, about four inches from the level of the neck. The posterior edge of the sterno-cleido-mastoideus overlapped it in front, and it was bound down by the platysma myoides; yet its attachments at its base were loose. No large vessel could be discovered in close connection with it. The skin was moveable upon the tumor, except at its most projecting part, where there was an extensive cicatrix; and here

the skin was thin, and firmly adherent. The patient suffered no pain in the swelling. On grasping it, it had a feeling of solidity throughout its general mass; yet there was a softness and elasticity in its more superficial part which gave the impression that the tumor consisted of fat. The patient first observed the swelling so far back as twenty-five years ago, and it was not long of acquiring its present size; since which time he has had no further inconvenience from it than as a deformity. About twelve years ago, by his wife's persuasion, he applied a quack salve to the tumor, in order to disperse it: the effect was, that a portion of the skin mortified, and the scar seen on its surface was produced.

Having been kept in the hospital a few days, and some purgative medicine administered, the operation of removal of the tumor was performed, October 14th.

Two elliptical incisions were made in the length of the tumor, so as to include the cicatrix mentioned above. The anterior flap was turned aside first. In effecting this, a layer of dense fascia, consisting principally of the platysma myoides altered in structure, was cut through; and then the cellular attachments of the tumor were found to be comparatively thin and delicate. These were divided by directing the edge of the knife upon the tumor, and pulling the tumor, at the same time, forcibly to one side, in the manner employed when cleaning the fibres of a muscle in dissection. Only one small vein was opened in the course of turning out the tumor from its bed. The chief adhesion was at the superior part; and when this was cut through at the last, a small artery, requiring ligature, was divided, and also a branch of the superficial cervical plexus of nerves, which passes to the occiput. The edges of skin were brought together by three sutures. In the course of a few hours after the operation the wound was dressed by placing a strip of simple dressing over the line of the incision, laying a long narrow compress of lint on each side, and securing these by adhesive straps: a pad of cotton wool was then put over all, and secured by calico roller round the neck. The patient did not utter any expression of pain during the operation, and walked back to bed without assistance. The tumor weighed three-quarters of a pound, and it consisted wholly of fatty substance, without any distinct cellular envelope. The patient was ordered—

Hydrarg. Chlorid. gr. iii.; Extr. Colocynth. Co. gr. vi.; Antim. Pot. Tart. gr. ʒ. Hora somni.

On the fifth day his health was so good, and the wound was so near being healed, that he was allowed to sit up.

October 25th.—There being only a small

part of the wound not united, he was made an out-patient.

Post-mortem appearances in a case of dislocation of the shoulder, four days after reduction.

A coachman, who fell from his box and suffered compound fracture of his right leg, and also dislocated his right shoulder, was seized with delirium tremens, and died five days after the accident. The humerus was reduced without much difficulty, by raising the elbow above the level of the shoulder, and then directing the head of the bone into the socket, the surgeon using his forearm as a fulcrum, and suddenly depressing the patient's arm.

On removing the integuments from around the shoulder, considerable ecchymosis was observed in the posterior fasciculus of the deltoid muscle; and there was also a slighter appearance of the same kind in the anterior part of the muscle. The deltoid having been cut across transversely, pus was found in the bursa situated beneath it near its insertion. Upon exposing the articulation, by dissecting off the superior part of the deltoid, a laceration of the capsular ligament, of about an inch in length, and close to the greater tubercle of the humerus, was brought into view. The chief part of the greater tubercle was torn off, in the form of a thin shell of bone, from the head of the humerus. This was obviously produced by the supraspinatus, infra-spinatus, and teres minor muscles, which are inserted in common into that process, having been put violently upon the stretch when the dislocation occurred; and the rent in the ligament must have taken place from the same cause, owing to the tendons of those muscles being inserted likewise into the capsule. The tendon of the long head of the biceps preserved its place in its proper groove; but it was nearly torn completely through, two-thirds of it, at least, being either torn or in loose shreds, while the remainder was softened in its structure. Nothing deserving of note was observed in the short head of the biceps, coracobrachialis, and the pectoral muscles, or vessels and nerves, except a slight ecchymosis in a few points. The subscapularis muscle also appeared uninjured. The dissection was now prosecuted by carefully detaching the capsular ligament from the humerus, cutting it close along the cervix. No additional laceration, besides that already noticed, was seen, till the glenoid surface of the scapula was disclosed; when it was found that the capsule had been completely torn from the inner edge of this cavity. By putting the fingers into the rent thus formed, and tracing the boundaries of the cavity into which it led, it could readily be ascertained where the head of the humerus had lodged when it was

displaced: it must have lain directly upon the cervix, and part of the venter, of the scapula, just under the root of the coracoid process; and the fibres of the subscapularis muscle, where they converge to be inserted into the lesser tubercle of the humerus, must have covered it on its inner side. The synovial membrane of the joint was stained of a brown colour, from the effects of the effused blood, but was not otherwise much altered in structure.

Post-mortem appearances in rupture of the tendo-achillis, six weeks after the accident.

John Lennard, æt. 48, was admitted under Mr. Shaw's care, September 16th, with rupture of the tendo-achillis of the left leg. The foot was secured in the usual position for that accident, during five weeks. At the expiration of that time he was suddenly seized with acute bronchitis, and died on the 28th October, six weeks from the day of his meeting with the accident.

The tendon was removed for more careful examination. It was found that the injury had occurred two inches above the os calcis. There was slight condensation of the cellular membrane and adipose tissue immediately investing the tendon, where it had been ruptured. Having cleared this off, the surface of the tendon, on its posterior or superficial aspect, was continuous from the sound part above to that below; while, on the anterior part, there was a depression, caused by the separation of the ruptured fibres from each other and the space between them being imperfectly filled up. When a longitudinal section was made through the injured part, it was apparent that the rupture of the fibres of the tendon had not been complete; that a layer, amounting to about an eighth of an inch in thickness, situated on the posterior aspect, had escaped being torn through, while the remainder of the fibres had been ruptured, and drawn apart from each other to the extent of an inch. Each ruptured end was of an irregular conical shape, and was distinguished by a bright red colour, caused by effusion of blood, which retained its florid hue, among its fibres. This redness was greatest along the margins of the torn fibres; and was in striking contrast both with the glistening whiteness of the sound part, and with the colour of the substance which formed the medium of union between the ruptured ends. The interposed new structure was of a dull brown colour, slightly reddish, and was about half an inch thick. It was harder and more inflexible, and offered greater resistance to the knife in cutting it, than the adjoining sound tendon. On holding it in a particular light, faint indications of a striated appearance on its surface could be

discerned, but it resisted attempts to divide it by lateral separation into distinct longitudinal fibres, which is so readily effected in properly developed tendon. After a few days' maceration in water, the brown colour characteristic of this part became of a lighter hue, approaching to yellow; and several white longitudinal fibres, similar to those existing in common tendon, could then be seen scattered within it. A portion of the tendon was submitted by Mr. T. Wharton Jones to microscopical examination, and he has kindly given the following report of his observations:—

"The substance uniting the ruptured tendon, firmer than cellular tissue, less compact than tendon, is not unlike the tissue of fibrous tumor. It consists of fasciculi of fibres, closely arranged, and interwoven like a felt work. It cannot be teased out so easily as tendon; and the fibres that are isolated do not present such an even contour as those of regular tendon. Acetic acid, without reducing the tissue to a uniform jelly, as it does cellular tissue or tendon, rendered the fibrous structure more transparent, and thus brought into view nuclei in various stages of elongation into nucleous fibres. The yellowish red colour of the new tissue is owing to numerous minute orange coloured corpuscles dispersed throughout its substance."

OBSERVATIONS ON SOME OF THE SIGNS OF LIVE AND STILL BIRTH,

IN THEIR APPLICATIONS TO MEDICAL
JURISPRUDENCE.

By DR. BECK.

[Concluded from p. 239.]

2. THE HYDROSTATIC TEST.—This test is founded upon the difference in the specific gravity of the lungs before and after respiration. In other words, lungs which have respired will float in water, while those which have not respired will sink. Every observation which I have been enabled to make has confirmed me in the general accuracy of this test. It is liable, however, to certain fallacies or objections, which require to be understood, to enable us to make correct application of the test. On the one hand, lungs which *have not respired* may float from *putrefaction*—from *artificial inflation*—from *emphysema*; while, on the other hand, lungs which *have respired* may sink from disease, or from the respiration being *feeble or imperfect*. Of these I shall only notice two, as they are the only ones of which illustrations have occurred in the cases which I have examined. They are, however, the most important of all the objections.

a. Putrefaction. That the lungs of a child which has not respired may float in consequence of putrefaction, although at one time questioned, is beyond doubt. The case which I shall presently relate, independent of numerous others, establishes this fact. The modes of distinguishing it from the floating of respiration are simple and obvious.

a. By the air bubbles being visible under the external covering of the lungs. In vital respiration this is not the case. *b.* By the ease by which the air can be pressed out of the lungs. By simply squeezing them in the hand, they can readily be made to sink in water. In vital respiration this cannot be done. *c.* By the sinking of the internal portion of the lungs. The air, in putrefaction, forms on the surface of the lungs; and hence the internal part, if cut out and put into water, will not float. In vital respiration, the internal part will float more readily than the external part of the lungs.

Case.—Aug. 25, 1838. A still-born child was presented for examination by Dr. Wilson, of Bellevue Hospital. The child had been born two days before. The weather being intensely hot, decomposition had commenced. The body was of a greenish colour; the abdomen greatly distended; the skin peeling off in several parts of the body. The cord about two inches long, smooth, soft, and flexible; weight, 31,680 grains; length, 22 inches; the umbilicus twelve inches from the top of the head—the centre of the body, accordingly, a little above the umbilicus. On opening the chest, the surface of the lungs was found covered with air bubbles, varying from the size of a large pea to a pin's head. On the posterior part of these organs there were no air bubbles. The colour of the lungs was dark red, with here and there spots of a lighter hue. The lungs taken out of the chest, with the heart and thymus gland attached, floated in water; separated from the heart and thymus gland, they also floated, as did also the latter organs. The weight of the lungs was 540 grains; making the relative weight to that of the weight of the body as 1.58. A portion of the internal part of the right lung being cut out, sank in water. Each lung was now cut into ten pieces, and on being put into water, some sank, while others floated. On being moderately compressed between the fingers, each separate section sank rapidly to the bottom of the vessel. The ductus arteriosus was cylindrical in shape, and about the size of the pulmonary artery; the foramen ovale open; the umbilical vessels and ductus venosus pervious; and meconium in the large intestines.

This case illustrates, very strikingly, the fact that the lungs of a still-born child may float from putrefaction, and at the same

time confirms the accuracy of the tests by which it may be distinguished from the floating which is the result of vital respiration.

b. Artificial inflation.—That the lungs of a child which has not respired may be artificially inflated, so as to cause them to float, though doubted by some, is well established; and when this is the case it presents one of the most puzzling problems—to distinguish it from vital respiration. The only test upon which any reliance can be placed is the application of suitable pressure to the lungs. If the floating be the result of vital respiration, no degree of pressure can expel the air from the lungs sufficiently to cause them to sink; while, on the other hand, in cases of artificial inflation, this can be done.

Case.—Dec. 6, 1837. Examined a child which had been still born, but which the accoucheur had attempted to resuscitate by blowing into its mouth, but without success. Length, twenty inches; the centre of the body at the umbilicus; head full of hair; nails full grown, and the body perfectly sound; weight, 47040 grains. No inflammatory circle around the navel; thorax flat. On opening the chest, the lungs were found in the upper and lateral portions of the chest, leaving the pericardium and diaphragm uncovered. On taking out the lungs, the *right* lung was of a dark red colour, with the exception of the lower part of the upper lobe, and the upper part of the lower lobe, which were of a bright red. Distinct crepitus in both lungs in the parts corresponding to the bright patches. The weight of the lungs was 900 grains, making the relative weight to that of the body as 1:52. Both lungs floated in water. The separate lobes of each lung also floated. The right lung was then cut into twelve pieces, all of which floated; but all the pieces sank after being subjected to pressure. The left lung was cut into ten pieces, and all but one floated. On pressure being made they all sank. The pressure was made by placing them in a piece of strong linen, and then twisting and wringing them; after this they were placed under a large flat stone.

The ductus arteriosus was as large as the trunk of the pulmonary artery, cylindrical in shape, and much larger than the branches of the pulmonary artery. The foramen ovale, ductus venosus, umbilical arteries and veins, all open.

This case is exceedingly interesting, as illustrating the effects of artificial inflammation, and as showing how nearly they resemble those of vital respiration. The floating of the lungs was almost perfect, and the weight of the lungs (900 grains) was nearly that of the usual average standard of children that have respired. On the other hand,

the sinking of the lungs, after due pressure, the relative weight of the lungs and the body, 1:52, and the state of the ductus arteriosus, were in favour of artificial inflation.

3. STATE OF THE DUCTUS ARTERIOSUS.

—This is called the *Vienna test*, from its being originally suggested by Prof. Bernt, of Vienna. It is founded on certain changes which take place in the ductus arteriosus immediately after respiration. In the mature fœtus before respiration, this duct is about half an inch long, cylindrical in shape, with a diameter about equal to that of the pulmonary artery, and more than double the size of the branches of that artery, each of which is equal to that of a crow quill. If the child have respired a few moments, the duct becomes conical in shape, with its contracted part towards the aorta. If the child have respired for some hours or a day, it becomes cylindrical again in shape, but lessened in length and diameter. It is much less now than the pulmonary artery, and not larger than the branches of that artery. If the child have respired for several days or a week, the duct will be found still more contracted; its diameter will be not larger than a crow quill, while the branches of the pulmonary artery are much enlarged to the size of a goose quill.

The result of my observations goes strongly to support the accuracy of these observations. In six still born children, I found the ductus arteriosus cylindrical in shape, and about the size of the main trunk of the pulmonary artery, and considerably larger than the branches of the pulmonary artery—in some cases double the size. In a seventh still-born child, I found it nearly the size of the pulmonary artery, but not much larger than its branches. In a child which had lived four days, the ductus arteriosus was cylindrical, three lines in length, and about the size of a crow-quill, and not more than half the size of the pulmonary artery. In a child which had lived three days, the ductus arteriosus was about two and a half lines long, and cylindrical, about one third the size of the pulmonary artery and somewhat smaller than the branches of that artery. In a child which lived forty-six hours, the ductus arteriosus was one-fourth of an inch long, cylindrical in shape, less than half the size of the pulmonary artery, and about equal to the branches of that artery.

Although the foregoing observations, generally speaking, confirm the accuracy of this test, it is to be recollected that it is not to be relied upon in all cases. This has been shown particularly by Orfila.

I have thus, as briefly as possible, recorded the results of the foregoing observations, without indulging in the many comments which naturally suggest themselves. I have,

however, in another place,* so fully discussed all the points connected with this subject, as to render them at present unnecessary.—*Trans. Med. Soc. State of New York*; and *American Journal of the Med. Sciences*.

DALBY'S CARMINATIVE.

R Tr. Opii. ʒj. ; Tr. Assafœt. ʒiiss. ; Olei Carui. ʒj. ; Olei Menth. Pip. ʒij ; Tr. Castorei, ʒviss. ; Sp. Rectif. ʒvj.—
M. S. A.

When the mixture is complete, it is to be divided into two-drachm doses, which are to be poured into small bottles containing from seven and a half to ten drachms a-piece, into each of which a drachm of calcined magnesia has been previously introduced. Finally, the bottles are to be filled up with simple syrup, and a small quantity of rectified spirits, and to be well shaken to mix the whole.

This medicine is one of the most ancient and popular arcana in Great Britain, where it is recommended in the flatulence, gripes, convulsions, &c. of infants; and in the irregular gout, the bloody flux, and violent colic of adults. It is thought eminently serviceable in the different bowel complaints to which sea-faring men are very subject.

Five or six drops are given to weakly infants two or three days old, in a tea-spoonful of warm water sweetened; and if this dose does not produce the desired effect in six or eight minutes, it is repeated. The dose is augmented in proportion to the age of the little patients, and the severity of the symptoms to be combated. Two doses in a day, or three at the most, are sufficient for the most obstinate cases.

A tea-spoonful is given to infants from one to two years old, or even more if the symptoms are violent. Three tea-spoonfuls are given to children seven years old.

Adults take half or two-thirds of a bottle for a dose, either pure, or mixed with as much warm water as will make it of an agreeable temperature. In all cases it is necessary to shake the bottle before pouring out the dose.

It has been observed that in persons subject to constipation, or who often vomit acid matter, it is very useful to combine magnesia with the use of this carminative.—*Journal de Chimie Medicale*, Sept. 1842.

[Like other popular nostrums, Dalby's Carminative is made after various receipts, so that the dose which is perfectly safe when the cordial is prepared by A, may be poisonous

* *Elements of Medical Jurisprudence*, by T. Romeyn Beck, M.D., and John B. Beck, M.D.

when it is manufactured by B. In the Returns from the Coroners of England and Wales, made to the House of Commons in 1839, we find ten cases of death from Godfrey's Cordial, and one from Infant's Mixture. Dr. John Clarke mentions an infant destroyed by forty drops of Dalby's Carminative.—*Translator's Note.*]

INTRODUCTION OF AIR INTO THE VEINS.

DR. GODEMER, Physician to the hospital of Ambricres, in Mayenne, has published in the Transactions of the Medical Society of Indre and Loire, three cases of tumor in the neck, during the amputation of which a peculiar hissing noise was heard, followed by the instantaneous death of the patient. The only abnormal appearance presented on the examination of the body was the distension of the cavities of the heart by a great quantity of air. In removing large tumors from the neck, or from near the heart, we should avoid anything by which the entry of air into the veins can happen. Among these causes, M. Godemer classes the movements given to the tumor in dividing the circumjacent cellular tissue, with the view of removing the diseased growth whole. To avoid this inconvenience, under these circumstances, he removes the tumor piecemeal, and since he adopted that plan he says he has not lost a single patient by this unfortunate occurrence. Six cases of tumor of the neck were operated on by him in 1839 and 1840, and with success. The patient suffers a little more pain; but in exchange, there is not any danger of the passage of air to the heart, and the consequent immediate death of the patient.—*Prov. Med. and Surg. Journ.*

CASES OF POISONING IN GERMANY.

1. *Poisoning by arseniate of copper, with the successful administration of the hydrated oxide of iron.* By Dr. FIEDLER.

A PIECE of bread and butter, thickly covered with common green paint, having been placed to destroy beetles, a child two years old ate a middling sized bit of it, and soon afterwards vomited violently. After the child had drunk a good deal of milk, it was quiet, but soon afterwards still more violent vomiting came on, the whole body became cold, and the features distorted. The author prescribed the hydrated oxide of iron. When he visited the child five hours after-

wards, he found it sleeping tranquilly; the whole body was uniformly warm, the pulse quiet, and vomiting had entirely ceased. With the exception of a mild diet, no prescriptions were required. Fourteen months have now elapsed, and the child remains quite well, like the one whose case the author reported several years ago.

2. *Poisoning by digitalis.* By Dr. SIEMON DAWOSKY.

A man, about fifty, had been freed from the symptoms of incipient hydrothorax, by the ethereal tincture of digitalis, combined with the spirit of nitric ether, and ethereal oil of juniper. Being again attacked by these symptoms in the autumn of 1841, he derived the same benefit from the same medicine. But after the patient had taken the remedy for about twenty days, the following phenomena came on. The pulse, which, during the former use of the remedies, had lessened by ten or fifteen beats in a minute, now sank almost to half its usual number. Besides this, the patient was tormented by the most painful disquietude, so that, even in the night, he left the bed every moment, could not sleep, and with his eyes open conversed with persons who were not present. At the same time the pupils were dilated, the conjunctiva both of the eye and the lids was red; he had little appetite, with great nausea, and violent thirst, with great dryness of the mouth; the alvine evacuations were scanty, the secretion of urine was increased. These phenomena, which obviously were merely effects of the digitalis, had lasted six days, when the restlessness diminished, sleep returned, and the dilatation of the pupils disappeared. This history should serve as a warning, when one is tempted, as one so often is in diseases of the heart, to use digitalis a long time uninterruptedly.

[We recommend the beginner, as a safe general rule, to use hyoscyamus instead of digitalis, to quell inordinate action of the heart. As a diuretic, there are many excellent substitutes.—*Translator's Note.*]

3. *Poisoning by decayed carrots.* By Dr. LIEBER, of Berlin.

A girl eight years old, who had gone to bed cheerful and well, on awaking complained of headache. Violent vomiting came on, which was quieted by chamomile tea, but convulsions were observed soon afterwards. They continued till noon, when Dr. Lieber was sent for, but he could not see her till after 3. She was lying, without consciousness, on her back, and breathed but faintly; her face was rather puffy; her pulse quiet and full; the bowels not open. Leeches to the head and a clyster were prescribed, but before these remedies could be

used the girl was dead. No cause for the illness could be discovered, except her having eaten a considerable quantity of half-rotten carrots, which had been thrown into the court-yard. A boy belonging to another family, who had eaten of these carrots, was also ill, but recovered after spontaneous vomiting and diarrhoea.

A post-mortem examination, 28 hours after death, confirmed Dr. Lieber's conjecture as to the cause of death.

The membranes of the brain were very full of blood; the brain, which was normal in consistence, was less so; the sinuses, again, were distended with blood. There was no effusion in the ventricles, and the *plexus choroidei* were rather paler than usual. There was no disease in the cavity of the thorax. The external surface of the stomach was unaltered, but on the internal one, particularly at the greater curvature, there were several inflamed spots of different sizes. They were dark-red, and their finest vascular ramifications could be distinctly seen, and could not be washed off with water. Bluish spots were to be seen in the intestines, but only in their peritoneal covering; at least the mucous membrane bore no marks of inflammation.

4. Poisoning by liver-sausages.

Eight persons belonging to the family of a countryman named Ehrmann, at Simmetshausen, were poisoned by eating sausages, in May, 1841. They had been made by Ehrmann from a pig slaughtered a week before, which appears to have been perfectly healthy. The sausages tasted sour, but two of the family ate heartily of them, namely, the countryman himself, a man of 64, and his man-servant, aged 28. They all fell ill two, three, or four days after partaking of them.

The following symptoms were observed in all, in a greater or less degree:—giddiness; great weakness of sight, which gradually increased almost to blindness; double vision, with perfectly undisturbed consciousness; remarkable dryness of the mouth and fauces, the structures of which, with the exception of the tongue, were of a deep red, and covered with elevated points, which were also red; difficulty of swallowing felt below the *pomum Adami*; sensibility of the epigastric region; vomiting; diarrhoea; griping; paralysis of the eyelids, so that the patients could not open their eyes; enlargement and immobility of the pupil; a bluish reddening of the sclerotic; a lisping utterance, difficult to be understood; constant decubitus on the back, with a perfect capability of putting out the tongue; entireness of the mental powers, the hearing, and voluntary motion; and a pulse of tolera-

ble strength, but slightly quickened, and only occasionally intermitting. Moreover, there were paroxysms of suffocation on attempting to swallow even fluids, stoppage of urine, and, lastly, frequent, deep, sighing respiration, with rattling in the larynx and the chest.

Three of the patients, who had eaten most heartily of the sausages, died; Ehrmann on the fourth day of the fatal supper, the servant also on the fourth day, and one of the countryman's sons, aged fourteen, on the ninth day. Another son, aged eighteen, had not recovered perfectly till the expiration of four weeks. The dissection of the three who died gave the following results. On the surface of the dura mater there were a number of drops of deep-red blood, while the other membranes showed no superabundance of blood, but were rather pale. There were abscesses of the size of a pea, filled with thick, whitish pus, in the tonsils. The pharynx was bluish-red, the epiglottis pale, the *rima glottidis* wide open; the larynx was slightly reddened on its inner and upper surface, while immediately below the larynx the whole inner and upper surface of the trachea was of a dark bluish red, in consequence of close-set vascularity and angillations. This colouring had a speckled appearance, from the interposition of spots which were not so dark. Towards the division of the bronchi the colour was deeper still, and extended into all the bronchial ramifications, which, when cut through, sent forth dark frothy blood. The lungs, particularly in their posterior and inferior parts, were filled with very dark blood, did not crepitate there, had a velvety appearance on the cut surfaces, and were nearly in the same condition as one finds them after typhoid diseases. In the patient who died first, the heart was wasted and brittle; and in the other two it contained several yellow polypi; and, in one of the two, the ventricle contained a small, in the other a larger, quantity of serous fluid.

In all three cases the liver was of a leaden colour in the left lobe and on the lower surface; in the interior it was of a pale brown, and brittle, with the exception of the third case, in which it was of the usual firmness.

In the old man and the servant the spleen was softened (*malsch*) and nearly double the healthy size; the inner surface of the œsophagus was not reddened, but, on the contrary, lined with a white substance like smegma; the cardia also was not reddened, but the fundus of the stomach was of a dark red. In the stomach of the son aged 14, besides several specks of a dirty pink, which scarcely differed from the physiological state, there was a spot several inches in circumference, so soft that when touched it broke into a

a hole. The inner surface of the small intestine, which contained a yellow fluid, was, in one case, of a dark and dirty gray, in another blackish, as if besprinkled with ink powder; in the third, reddish, with minute spots. The external surface of the intestinal canal was of a dirty grey, and in part reddish colour, as it happens after slight inflammation. The colon was extremely dilated, and the cæcum was stuffed with greenish-yellow faeces into the semblance of a thick ball.

Of all the remedies which the author used, the aqua oxymuriatica (solution of chlorine) alone seemed to be of advantage.

Dr. Röser hopes that organic chemistry may come to more satisfactory conclusions respecting this destructive poison of sausages. — *Schmidt's Jahrbücher*, August 1842.

[We have abridged the last case considerably.—*Translator*.]

INJURIOUS DYE FOR THE HAIR.

DR. A. TH. BRÜCK, of Osnabrück, thinks that a violent ophthalmia, under which a lady of 46 was labouring, might be attributed to a dye which she had used during several years for her hair. It is sold at Cologne, under the name of *Poudre d'Italie*, and has been shown, by chemical analysis, to consist of lead and lime.—*Schmidt's Jahrb.*

PROFESSOR OWEN.

WE are happy to announce that a pension of £200 per annum has been bestowed on Mr. Owen, in consideration of his laborious exertions in reference to the Hunterian Catalogue. The reward has been well merited, and we hope will be long enjoyed.

MIDDLESEX HOSPITAL.

WE regret to announce that Mr. Mayo has been compelled, by the state of his health, to resign the office of Surgeon to Middlesex Hospital. Mr. Shaw, who has for some time been Assistant-Surgeon, will, almost as a matter of course, be elected in Mr. Mayo's place. Several gentlemen are in the field for the Assistant-Surgeony.

RECEIVED FOR REVIEW.

Dr. Hull's Essays on Determination of Blood to the Head.

The Literary and Scientific Register and Almanack for 1843. By J. W. G. GUTH, M.R.C.S.L.

Dr. Copland's Dictionary of Practical Medicine, Part VIII.

Mr. Forbes Winslow on the Preservation of the Health of Body and Mind.

ROYAL COLLEGE OF SURGEONS.

LIST OF GENTLEMEN ADMITTED MEMBERS.

Friday, November 11, 1842.

H. A. Arden.—G. F. Hewson.—H. Vidal.—J. H. Kimbell.—T. L. Hodson.—G. Cole.—A. Adyr.—J. P. Bourne.—W. Simpson.

A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, November 5, 1842.

Small Pox	8
Measles	22
Scarlatina	44
Whooping Cough	21
Croup	7
Thrush	2
Diarrhoea	5
Dysentery	2
Cholera	0
Influenza	1
Typhus	23
Erysipelas	5
Syphilis	1
Hydrophobia	0
Diseases of the Brain, Nerves, and Senses ..	134
Diseases of the Lungs and other Organs of Respiration	323
Diseases of the Heart and Blood-vessels	19
Diseases of the Stomach, Liver, and other Organs of Digestion	47
Diseases of the Kidneys, &c.....	6
Childbed	9
Ovarian Dropsy	0
Disease of Uterus, &c.	2
Rheumatism	3
Diseases of Joints, &c.	5
Ulcer	0
Fistula	0
Diseases of Skin, &c.....	1
Diseases of Uncertain Seat	127
Old Age or Natural Decay	83
Deaths by Violence, Privation, or Intemperance	43
Causes not specified	2

Deaths from all Causes 956

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude $51^{\circ} 37' 32''$ N. Longitude $0^{\circ} 3' 51''$ W. of Greenwich.

November.	Thermometer.	Barometer.
Wednesday 9	from 37 to 47	29.77 to 29.65
Thursday 10	41 50	29.63 29.52
Friday 11	43 55	29.19 28.91
Saturday 12	40 50	29.04 29.45
Sunday 13	43 51	29.45 29.22
Monday 14	37 49	29.62 29.69
Tuesday 15	40 45	29.59 Stat.

Wind, S. on the 9th and 10th; S. by E. on the 11th; S. by W. on the 12th and 13th; N.W. on the 14th; N.E. on the 15th.

Except the morning of the 14th, generally cloudy with frequent, and at times heavy rain.

Rain fallen, one inch and 7/95 of an inch.

CHARLES HENRY ADAMS.

NOTICE.—We regret that we cannot give insertion to Mr. Tucker's letter. We agree with him that as the *Lancet* originated the attack it ought to have admitted the defence. His letter is left at our printer's.

WILSON & OGILVY, 37, Skinner Street, London.

THE LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, NOVEMBER 25, 1842.

LECTURES
ON THE
THEORY AND PRACTICE OF
MIDWIFERY,

*Delivered in the Theatre of St. George's
Hospital,*

BY ROBERT LEE, M.D. F.R.S.

LECTURE VII.

*On the human ovum, in the first month of
pregnancy.*

THE human embryo is enclosed within a sac, to which it is attached by the umbilical cord. This sac is composed of three distinct membranes—the amnion, the chorion, and the decidua. The decidua is the outer membrane, the chorion is the middle, and the amnion the inner. If you cut open a gravid uterus in the early months of pregnancy, as in this preparation, you will observe the decidua adhering to its whole internal surface. On dividing this membrane, you will then see the entire space between the decidua and membrane of the chorion occupied all round the ovum by the placenta and villi of the chorion; and on laying open the membrane of the chorion, from the outer surface of which all the villi extend to the decidua, the amnion will come into view, which immediately encloses the embryo and liquor amnii, and forms the sheath or covering of the umbilical cord: you will also see the vesicula umbilicalis, situated between the amnion and chorion, a short distance from the insertion of the umbilical cord into the membranes.

There are upwards of thirty human ova of different ages, from the latter part of the first month to the commencement of the fourth, now placed upon the table before you. There are only three of these which undoubtedly belong to the first month, but none of them are perfect ova, the chorion and its contents in all of them having been

expelled, and the deciduous membranes left within the uterus.

In the first specimen, the age of which could hardly have exceeded twenty days, and which is about the size of a common hazel-nut, you see the whole is covered with the villi of the chorion. On one side the villi are more luxuriant than on the other, but there is no part of the membrane of the chorion smooth, or destitute of villi. Within the cavity of the chorion which has been laid open, you see the vesicula umbilicalis about the size of a small pea, and closely adhering to it is the embryo, enclosed within the transparent amnion, and which is rather smaller than the vesicle. The embryo is not quite two lines in length, and is much bent. It resembles exactly this figure of a very young embryo contained in Socmmering's plates. There is a space between the amnion and the inner surface of the chorion which is occupied by a soft reticular texture, in which is imbedded the vesicula umbilicalis. This is probably one of the most healthy human ova which has yet been examined. In a second specimen of the human ovum nearly of the same age, which was expelled in abortion, the entire surface of the chorion was covered with villi. The cavity of the chorion likewise contained the vesicula umbilicalis and amnion, but there is only an opaque spot seen within the amnion, and no distinct embryo. In a third ovum, belonging also to the latter part of the first month, you see there is no difference between the appearance presented by the villi of the chorion, in this, and in the other two specimens, which you have now examined. But the cavity of the chorion contained only the vesicula umbilicalis, which was imbedded in the common soft reticular texture always found in this part of the ovum. By the slightest touch the vesicula umbilicalis was detached from the chorion, and it now floats loosely in the spirit of the preparation. There was no embryo or amnion, that I could discover, within the chorion.

M. Velpeau has given the representation of an ovum without the decidua which he believed to be only eight or twelve days old. The whole was covered with villi of the chorion, and was about the size of a common pea. There was neither embryo, amnion, nor vesicula umbilicalis, contained within the cavity of the chorion. He has also given a figure to represent another ovum, the age of which he fixes at twelve days. It had the same size and appearance externally as the other, and within the chorion he saw the embryo and vesicula umbilicalis imbedded in a soft reticular texture which filled the greater part of the cavity of the chorion.

In the Philosophical Transactions of 1837, Mr. T. W. Jones has described a human ovum which was probably not more than three or four weeks old. On laying open the ovum, by carefully cutting and reversing the bald side of the chorion, the following appearances presented themselves. The whole cavity of the chorion was filled with a fine gelatinous cellular tissue, imbedded in which,

towards one extremity of the ovum, was a small round body. It was evidently the vesicular blastoderm, or germinal membrane; on being taken out and examined by the microscope, it presented the same friable globular structure found in the vesicular blastoderm of the rabbit. There was no vitellary membrane to be seen. The chorion of this ovum was expelled with the decidua, and lay in the middle of one of the parietes of the decidua, rather near its upper edge, and was the size of a large pea. One side of the chorion was smooth, the other shaggy, with the villi of the chorion, which leads me to think that this ovum was not in a perfectly healthy condition, and that development had been arrested some time before its expulsion.

The subjoined figures (1 to 7) from Mr. T. W. Jones, represent the natural appearance of this ovum and the ova of the mammifera, after impregnation.



Fig. 1, an ovum found in the fallopian tube of a rabbit the third day after impregnation, magnified forty diameters.

Fig. 2, the ovum of the frog when recently laid, magnified two diameters.

Fig. 3, the ovum of a water-newt, in which development has commenced, magnified rather more than twice.

Fig. 4, a diagram shewing the embryo of the newt after the vitellary membrane has given way, contained only within the cavity of the sub-

stance, which is added to the ovum in the oviduct.

Fig. 5, a diagram shewing the embryo of the frog still surrounded by the vitellary membrane, as well as the gelatinous substance, which is added to the ovum in the oviduct.

Fig. 6, an ovum found in the horn of the uterus of a rabbit seven days after impregnation, magnified forty diameters.

Fig. 7, a human ovum thrown off at the third or fourth week; natural size.

Prof. Wagner has described and given a representation of a normal human ovum of the third week, covered by the uterine decidua,

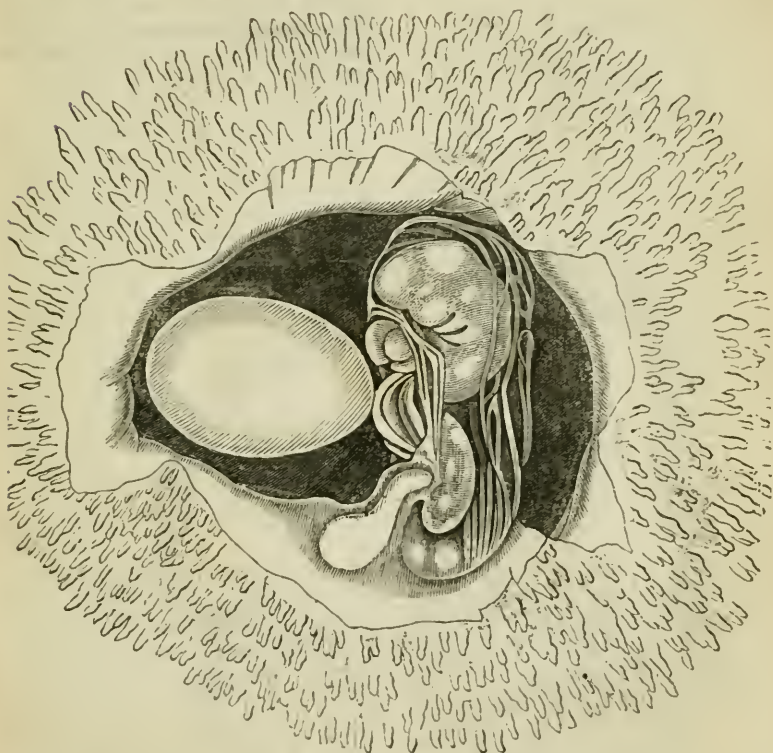
and which measured about seven lines in length. The subjoined figures represent this ovum of the natural size, and also magnified.



In this diagram is represented a human ovum of the third week (about twenty-one days old) enclosed in the decidua, size of nature, and considered by him to be in a perfectly normal state.



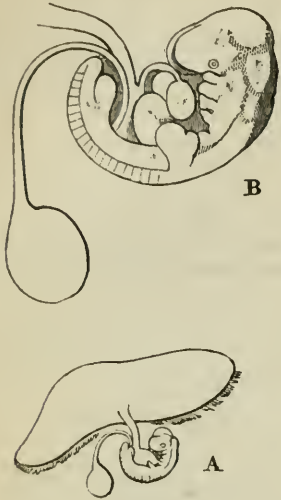
This is a diagram of the same ovum, with the chorion laid open: the embryo, about two lines long, closely surrounded by the amnion.



In this figure the same ovum is magnified: all the parts are designed from nature. The chorion is laid open and reflected, and the albuminous space betwixt the amnion and chorion are represented, and also the umbilical vesicle communicating with the intestine, the heart, lower jaw, ear, hemisphere, corpora quadrigemina, liver, eye, and the two branchial fissures.

The figures subjoined represent an embryo described by Müller, in Meckel's Archiv. 1830, tab. xi. The length of the embryo was $3\frac{1}{2}$ lines. The ovum was open,

and the amnion torn, when it was obtained. From the umbilical vesicle the long pedicle passed, enclosed in the umbilical cord, into the abdomen of the embryo.



EXPLANATION OF FIGURES.—*A*, natural size. *B*, magnified view. *C*, view still more highly magnified, with the membranes restored, and references to the several parts. He regards it as about twenty-eight days old. *a, a*, Chorion laid open and reflected; *b, b, b*, albuminous space betwixt the amnion and chorion; *c*, amnion; *d*, umbilical vesicle; *d'*, pedicle of the umbilical vesicle; *e*, noose of intestine communicating with *d'*; *g*, heart; *h*, lower jaw; *i*, ear; *k*, cerebellum; *k'*, hemispheres; *k''*, corpora quadrigemina; *l*, anterior, and *m*, posterior extremity; *n*, point where the allantois and chorion have coalesced; *n'*, umbilical cord; *p*, liver; *r*, eye; 1, 2, 3, branchial fissures.



M. Coste has given a description and figure of an early ovum. It was the size of a small hazel-nut. The chorion was distinctly villous, and on being divided the body of the embryo was perceived. It was a line and a quarter long and a line and a half broad, of an oval shape, and presented on the abdominal surface an elliptical opening half a line long. Through this opening there were fixed to the abdominal surface of the embryo the pedicles of two vesicles, one nearly opposite to the middle of the body, the other near the caudal extremity. One of these vesicles corresponds, he thinks, with the umbilical vesicle, and the other to the allantois.

Dr. Allan Thomson has described and figured three early ova, in the *Edinburgh Medical and Surgical Journal* for July 1839. They were all covered with villi of the chorion. One measured a quarter of an inch in diameter. The *vesicula umbilicalis* occupied a great part of the cavity of the chorion. The embryo was a line in length, and had its abdomen closely applied to the surface of the vesicle, with which it formed a common cavity. In another ovum, supposed to be only fifteen days old, the embryo and *vesicula umbilicalis* were attached to the chorion by a soft reticular tissue. The embryo lay almost flat upon the vesicle; the sides of the embryo passing, without interruption, into the walls of the vesicle. The amnion was not seen. In the third ovum described by Dr. Thomson, which was supposed to be about six weeks old, and was malformed, the embryo was one-eighth of an inch in length. The heart hung from the anterior aspect of the body in the form of a looped vessel. The intestine was a straight canal, the mouth being pervious and the anus closed. At the middle of the body the intestine opened, by a wide orifice, into the *vesicula umbilicalis*, which was contracted at its lower part. From the back part of the embryo, a pyriform body projected, by which it was attached to the chorion. The amnion was not formed. The bronchial apertures were visible.

Many of the very early ova described by other anatomists have likewise been malformed or diseased, and it cannot, with certainty, be affirmed that a single ovum, in a state of perfect health, has yet been examined in the first month of pregnancy. No positive inferences can therefore be drawn from them respecting the development of the different parts of the ovum during the first month after conception.

Good descriptions and representations of the human embryo, observes Wagner, one of the best and most recent writers on the development of the human ovum, within the first month from conception, are very scarce.

It is true, indeed, that we have many accounts of diseased ova, of monstrous or distorted embryos, of this period; but instead of aiding us, or advancing our knowledge of the earlier periods of development in the human subject, these accounts are even generally calculated to mislead, and it is therefore well to regard the greater number of them as of no kind of value. Some have said that they have found ova in the tubes, or on their very first entrance into the uterus, and before the separation of the embryo from the germinal membrane. But all statements of this kind yet in existence are, in the highest degree, unsatisfactory: the smallest ova hitherto observed in the uterus, or thrown off by abortion, which, in the present state of knowledge in regard to the history of development, can be allowed to be normal in their formation, or as even departing a little from the rule, have been about three weeks old. Such ova, still surrounded by the decidua, measure about seven lines in length; in the naked chorion they are about five lines long. The chorion is at this time beset externally with small cylindrical hollow villi, which either do not penetrate the decidua at all, or do so to a very trifling extent. The embryo itself is two lines long: it is plainly surrounded by an amnion, which lies loosely but still pretty closely about it, and obviously proceeds from the abdominal laminae. The embryo is curved, and presents anterior cerebral vesicles or hemispheres pretty well developed, and considerable corpora quadrigemina behind them; there is the distinct appearance of an eye, and a rounded offset from the medulla oblongata indicates the acoustic vesicle; several bronchial arches and fissures are also conspicuous; the last of them however, not yet completely formed. The anterior extremities are curved leaf-like processes of small dimensions; there is a cleft in the abdomen still open, from which the amnion is reflected. In this cleft is the heart, consisting of a simple auricle and ventricle; behind the heart is the liver, and under the liver the intestine: where the large and small intestine meet, the canal makes an extensive sweep in the umbilical vesicle, which is now nearly equal in size to the embryo. The embryo, together with the amnion and umbilical vesicle, do not occupy the entire cavity of the chorion; there still remains a considerable space which is filled with a delicate filamentous or arachnoidal tissue; occasionally also with an albuminous fluid. (See figure, p. 275.)

Respecting the mode in which the human amnion originates and is developed, nothing is known with certainty; the views which are now entertained by physiologists on the subject being founded almost entirely upon what is observed in the ova of birds. Dr. Pochels

thinks the human amnion consists at first of a large vesicle, which is unconnected with the embryo, and that the embryo acquires its proper amniotic sac by sinking into this vesicle,—an opinion which is contrary to all the observations made on the ova of other animals. M. Coste thinks the amnion is first formed by the detachment or raising up of the outer covering or epidermis of the embryo. Dr. Allan Thomson believes that it is formed by the union of the cephalic and caudal folds of the serous layer of the germinal membrane in the mammalia, nearly the same way as in birds. In the ova of the sheep, rabbit, and cat, he has examined the amnion in its open state, before the union of its cephalic and caudal folds. There are two opinions at least respecting the origin of the chorion. Some think that it exists within the ovary, others believe that the vitelline membrane constitutes the chorion. Valentin is of opinion that it is formed during the descent of the ovum through the tube, as the egg of the fowl acquires the albumen and shell in its progress through the oviduct. Mr. T. W. Jones, from observations on the rabbit, has proved that the ovum gets covered with a gelatinous substance which consolidates and forms the chorion. Dr. M. Barry has followed Mr. Jones, and his opinions confirm this view.

LUMLEIAN LECTURES,

*Delivered at the Royal College of Physicians
in London, 1842,*

By T. MAYO, M.D. F.R.S

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LECTURE II.

On Nervous Apoplexy.

Opinion that nervous Apoplexy contraindicates copious depletion, considered. Question, whether apoplexy from compression does not rather contraindicate it. Cases. Defective hypothesis which led to first opinion. Criteria of severe nervous Apoplexia, or Apoplexia gravior, considered, illustrated by insolation. Soothing practice, as opposed to depletory, appropriate to milder forms of nervous Apoplexy. This subject considered in relation to moral, intellectual, and physical excitants.

THE views which are to guide us in the history and treatment of disease may be formed in relation to various aspects of it. The first and most obvious one is that which brings together groups of coexisting or successive symptoms, proceeding in a certain order, and occupying a definite space of time. In this way it is easy to contemplate fevers; though they have been often viewed in one of the other aspects which we shall presently advert to.

But simple coexistence or succession of symptoms does not satisfy us as a basis of treatment; and we soon find a disposition rising in our minds to contemplate groups of symptoms, or to presume a connection between remote symptoms in relation to some more philosophical connecting link; and this link we find either in referring symptoms to some coexisting deviation from normal structure or functions, or in an hypothesis as to the efficiency of some presumed antecedent state.

To the first of these two principles of inquiry we are certainly indebted for the most tangible and definite results, inasmuch as it is the most capable of being submitted to the test of observation. In this way, for example, pathologists have made good and established the order phlegmasiæ; and in this way we are sometimes enabled to trace disease as affecting still the same tissue in *different* organs.

In dealing with the second principle of inquiry to which I have just adverted, namely, the framing some hypothesis on which we may account for the sequence of symptoms, or the affection of the organ which constitutes the disease, medical reasoners have, at different times, shewn every possible diversity in respect to venturesome or moderate speculation. The theory of medicine, as this procedure has been called, at one time has fallen into the temperate hands of a Cullen or a James Currey; at another time, it has been disgraced by a Brown, or rendered vague and fanciful by a Darwin.

I have now to call your attention to an instance of its somewhat mischievous interference in the doctrine of that physician to whose valuable work I called your attention in my last lecture: I mean Dr. Kirkland.

In my last lecture, while giving my tribute of praise to his valuable arguments in favour of a soothing rather than depletory treatment in that apoplexy which he calls nervous, as not being preceded by vascular action or sanguineous effusion, I adverted to his extending that rule to the apoplexia gravior; admitting the general truth of his assumption that this may be considered a nervous apoplexy. I ventured to suggest that his view of the subject, if carried out in practice, would go far to account for the incurableness attributed to that form of attack by Hippocrates, and others subsequent to him; for it would deprive us of our most efficient remedy.

The patient whose case I shall place before you in illustration of this topic, had been living in the workhouse of St. Marylebone before his attack occurred. He was a man of strong constitution and frame, who, it is probable, from his former occupation as a horse-keeper, had lived freely, but for

some time must have been limited in his diet. Having gone to bed in his usual health, he was heard in the night to make some sounds in his throat, which led to his being noticed by the other occupants of the ward. Mr. Allen, the assistant resident practitioner, was sent for; and I am favoured by that gentleman with the following account of the state in which he found the patient, and the practice which he adopted:—

“I was sent for to Joseph Tyler, æt. 62, in the workhouse, on the night of the 11th of November, 1841. I found him quite insensible; pupils much contracted; pulse about 60, and very low; the extremities cold: the right side of the body was affected by convulsive movements, which recurred at intervals of three or four minutes, and lasted about the same length of time: the left side was unaffected. I could not easily ascertain how long he had been in that state. For the last two or three days he had been complaining slightly to those around him of a pain in his head. I gave directions for his removal to the infirmary. When he arrived there, he was in a state of partial collapse: the face and extremities of a pallid blue colour; the pupils still contracted and insensible to light; the pulse was slow and feeble, and the convulsions recurred with much force. As he appeared a strong muscular man, a vein was opened. The pulse improving under this measure, the bleeding was continued, until he had lost about fifty ounces; a considerable quantity being also spilt on the floor, in consequence of the convulsive movements, on which the loss of blood seemed to take no effect. As soon as the pulse began to give way, the vein was closed. The symptoms continued, however, in every respect the same, except that the natural heat of the body had been in some measure restored. Recourse was then had to cupping on the temples. When he had lost about six ounces, the convulsions suddenly ceased, and the pupils began to dilate and contract irregularly. In a short time he started up in bed, endeavoured to mutter something, and looked about him in a bewildered way. The cupping was continued until he had lost twenty ounces; he was then sensible, but could not give a collected answer.”

These symptoms did not recur. The patient was brought under the influence of mercury by my friend Dr. Harrison, whose patient he was, and by whose permission I give this case: and in the space of a month he had entirely recovered.

The late Dr. Warren mentioned to me a case of sudden and violent apoplexy attended by himself, in which, after enormous venesection, the patient recovered at once and entirely. But I am not sufficiently in possession of that case to place it confidently

in the same point of view with that which I have just recorded.

A strong, middle-aged man, went to bed one night in his usual health. His wife was awoke by his throwing out his arm suddenly and violently. She found him insensible, breathing stertorously. A medical gentleman being sent for, found him in this state. Mr. Betts, the cupper, who narrated to me this case, was requested to cup him at the nape of the neck. The pulse was not deficient in force. Fifty-three ounces of blood were removed, and the patient at once recovered entirely.

Now these cases, in the opinion of competent observers, fell under the head of apoplexia gravior. The principle laid down by Dr. Kirkland, against which their treatment and event militate, refers to a theory of causation. He presumes that the sudden and violent shock, understood as apoplexia gravior, is one by which the vital principle is injured; and he therefore, under that influence of theory to which I have adverted, would place them, in respect to treatment, in an opposite category to that class of cases which he well describes as bearing evidence of antecedent vascular action and effusion. Now there is much value in the hypothesis which rescues nervous apoplexy and paralysis generally from depletion; and, therefore, lest it should be damaged by indiscreet generalization, it is the more expedient to point out, that, to the apoplexia gravior, its severer form, that hypothesis does not extend; nay, that this form may tolerate, and even require, a much higher degree of depletion, even than cases of presumed extravasation.

We will assume that there is some antecedent probability in the hypothesis of Dr. Kirkland, as to the “destruction of vital power” in apoplexia gravior; but there is another conceivable hypothesis, far more in unison with the above and many similar cases, namely, that vital power is under a temporary interruption; that, as far as the circulation is concerned, a spasm has occurred arresting its course in the brain. Meanwhile, the heart continuing to perform its functions, this supposition would imply a subsequent danger of congestion *ad tergo*, and a liability to rupture; so that the case, though no arterial action or sanguineous extravasation should precede or accompany it, may require the same treatment in kind as such phenomena would have indicated, and not that soothing or strengthening treatment which the unqualified supposition of a debilitating agent would imply. This important difference, however, requires notice, that, in the former case, that of nervous irritation, we have to prevent; in the latter, that of vascular action and presumed effusion, to obviate also; and possibly, in the former case, we may take, with impu-

nity, a larger quantity of blood than would be justifiable, under apoplexy of the latter kind, in which rupture may be presumed or feared to have already taken place; and in which only so much depletion will be warranted as may check the infiltration of blood, and not, by its abstraction from another channel, exhaust the patient, to whose capacity for outliving the absorption of the effused clot we must mainly look for his chance of recovery.

The practical question lost sight of by those who would deprecate depletion in apoplexia gravior, is not merely what state of the circulating system may have preceded the shock, but what may be produced by it, or be likely to follow it.

I may observe, that Dr. Kirkland himself, while he considers a sedative treatment desirable in such cases viewed as nervous affections, and wishes that opium should be tried, speaks most despondently of its probable results. He does not appear to have put it to any proof himself.

The following case was probably one of sanguineous compression from effused blood, though unfortunately this was not substantiated post-mortem. A large, full, healthy lady, aged 56, who had habitually endeavoured to obviate plethora, and head symptoms resulting from it, by large aperient doses, but never undergone venesection, was leaving her dining-room after her usual hearty dinner, when, having stooped to remove some dust from her dress, on resuming the erect position she complained of vertigo, and walked unsteadily through a gallery which led into the saloon. Soon excessive sickness came on, with some thickness of speech, and in a short time gradually indistinctness of thought, and disposition to coma. Mr. Kelson, of Sevenoaks, having been dining with this lady, was on the spot, and instantly bled her to about twenty ounces. I was sent for, and saw her in about three hours. Sixteen more ounces of blood were taken, a turpentine enema thrown up, and successive doses of calomel given. The pulse, which was oppressed, became softer; in the course of the next morning, the night having been passed in profound coma, it rose, and the coma somewhat diminished. She was then again freely bled till this action subsided,—and with it the slight improvement in respect to coma. On this occasion I was not present. But in the evening of that day I met Dr. Warren and Dr. Paris in consultation; and further depletion was resolved on. The coma still existed, with stertorous breathing, and blowing and puffing, with expanded cheeks. She was again bled. The pulse instantly sunk; and she died in a few minutes. The act from which this attack took its commencement, that of stooping

after a full dinner, and the gradual accession and increase of the cerebral symptoms, had much more the character of vascular rupture, with subsequent infiltration of blood, than of a nervous shock. Sauvages and Portal consider the ‘*crapulous apoplexy*’ to imply sanguineous effusion. A large quantity of blood, it will be observed, was taken away in the treatment of this case. Nothing resulted, as in Dr. Harrison’s case above quoted, either tempting a further extension of the remedy, or giving us the smallest reason to conclude that benefit had been derived from it. Simple debility appeared to result.

I have offered the above remarks, as limiting the too general proposition maintained by Dr. Kirkland, and commented upon in my last lecture, that nervous apoplexy occurring suddenly, and not preceded by evidence of vascular congestion, demands a treatment opposite to the depletory. But what criteria can be proposed by which the apoplectic stroke of arrested circulation may be distinguished from the apoplexy of compression? On this point I will not at present offer more than the following observation. When the extravasation is at once so large as instantly to suspend the functions of the organ, there is probably no criterion. Neither, in a practical point of view, is any wanted. For such a case of compression must be fatal: at least, I may express a belief, that in such a case, unless the asthenic state of the patient manifestly forbids, the taking our chance for the case being one of nervous apoplexy in its gravest form is not unreasonable; in other words, according to the above views, the depleting copiously.

There is a large class of analogous cases, in which this practice is actually carried out on a very large scale, by the most judicious practitioners. I allude to the practice under insolation. I cannot bring this before you either more clearly or more pertinently than in the description given of it, by the late Dr. Dick, in Duncan’s Medical Commentaries. Speaking of disorders witnessed by him in the Carnatic, “there is a species of apoplexy,” he observes, “which seizes the men, when fatigued by marching in the heat of the sun, and proves most fatal to the Europeans. They complain, first, of a great headache, thirst, and some difficulty of breathing; in a few minutes a vertigo and bilious vomiting comes on; they drop down breathless, turn comatose, and unless immediate assistance be given, the face swells and turns almost black; the pulse, which was at first full and quick, sinks, and after some hard struggles they expire. Removing them under the shade of a tree, bleeding them freely in time, and giving them some water, generally relieves them. Now this attack comes on under circumstances by no means warranting an hypothesis of prior vascular

action, such as favours extravasation. The patient is fatigued with marching; he is streaming with perspiration; on the other hand, 'no theory of extinguished or diminished vital principle' is allowed to prevent the full application of the lancet; and it is successful."

That hypothesis, therefore, which prohibits or restricts depletory treatment, in nervous apoplexy, must be confined in its operation to those forms of it in which the apoplectic stroke is of a milder character; and I shall now return to that subject, already illustrated by some cases in my first lecture.

It may probably be assumed of all these attacks of nervous apoplexy, that if they are allowed to run their course, that is, if neither the resources of art nor some analogous relief supplied by nature intervene, they tend to the same termination, namely effusion of some kind. But their chance of arriving at this termination will be widely different according to the precision with which we estimate the point from which the disorder originates. Now this point, or, in other words, the causes of that apoplexy which we are considering, will best be viewed under a threefold division. That is, it may be contemplated in relation to moral, or to intellectual, or to physical antecedents.

When a man in his ordinary state of health, receiving a letter, and reading it, becomes flushed, presently is giddy, perhaps vomits, and soon falls down insensible, or when the fall into temporary insensibility under these circumstances is instantaneous, who can perceive in this phenomenon or series of phenomena any other than a moral influence directly exercised upon that part, which is manifestly its bodily organ? What right have we to make it an element of our hypothesis, in explaining this case, that the communication is effected through the circulating system? Yet is the circulating system eventually affected in this case. For if the patient is not soon relieved, the spasm which has then taken place may terminate in sanguineous effusion, and thus lead to the same conclusion with the most unequivocal cases of originating vascular action. In such a case as this, moderate venesection, or cupping, is often required; unless the more unsanguine temperament of the patient allow the resolution to take place without any removal of the *vis a tergo*, but through the medium of antispasmodics. These cases, which I am drawing from nature, are distinguished from the apoplexia gravior by the contractile state of the pupil, the absence of stertorous breathing, and the presence generally of some indications of the hysterical temperament.

But if we follow a process of intellectual exertion on to its occasional termination in apoplexy, here the sequence of phenomena

places the case in a state much nearer to the apoplexy form of compression than to any nervous form of the disease. The excitants applied to the cerebral system are less intense than in the cases last supposed. They operate by repetition. The case indeed rarely comes before the physician until it has arrived at a state of congestion, indicated by a sense of gradually increasing fulness, weight in the head, inability to collect the thoughts, failure of memory, and lethargic tendency. These phenomena place it out of the category of nervous affections, according to our hypothesis. There is no shock of a milder kind occurring antecedently to the vascular fulness, and removable by a mere antispasmodic treatment, agreeably to the views propounded in my first lecture; nor is there one of the more vehement kind authorising in appropriate subjects large depletion. The case must be treated on the principles applicable generally to compression.

Viewed, however, as requiring generally the same treatment with apoplexy from compression, a treatment of which depletion must form a part, there are reasons why the apoplexy threatened by severe intellectual labours should be treated less "heroically" than other forms of such apoplexy. In the cases of that kind which I have witnessed or known of, there has existed a depressed state of nervous energy, which under active depletion is very apt to convert the threatened apoplexy into either mania or dementia, according as the temperament of the patient is sanguine or nervous. Such was the threat held out by the leading symptoms of a young man, who had just past his final examination as a cadet, at Woolwich last year, and came under medical attendance, owing to its effects, the next day. His severe mental affliction had continued for many months. For some days he seems to have been in an unsteady state of mind; and he described his recollections of what had taken place as confused, though he had been successful. His face was flushed and distended; his head uneasy, not heavy; his tongue moist, thickly coated, white, its edges very red; his skin hot; his manner puzzled, and not natural; his epigastric region was tender and painful; his abdomen soft. Some leeches were applied to the epigastrium, and a dose of five grains of calomel given, which was followed by an aperient draught, the operation of which indicated neither accumulation nor disordered biliary secretion. In the evening I was sent for in haste; the bewilderment of his mind was then apparently increasing. It was not delirium; no extravagancy or incoherency, but confusion and enfeeblement; his tongue had become dry and very white. I took no depletory measures. Quiet, mild mercurials and aperients, obviated whatever risk there

may have been of mischief from congestion, and did not incur that of demence. In about three weeks he recovered.

The temperament of this gentleman was rather sanguine; his make athletic and vigorous.

With these brief remarks on the tendency to nervous apoplexy arising from moral and intellectual causes, it is my present purpose to dismiss these topics.

With regard to the physical causes of nervous apoplexy, viewed specially in relation to the question of depletory or antispasmodic practice, whatever distinctions are here made, a large space must be left for those cases in which none can be confidently laid down. In many of these cases we shall find exhaustion from causes which have reduced nervous energy. Such appeared to be the case in the apoplexies immediately preceding accouchement, mentioned in my first lecture as successfully treated by laudanum. The patient has, perhaps, led an intemperate life; he has indulged in sensual habits; he has, perhaps, been shaken by medicinal treatment. In some cases the nervous structure of the brain may be primarily affected by the circulation, not as excessive in general quantity or local congestion, but as containing ingredients to which it has no right, or losing those which normally belong to it. This influence would be analogous to asphyxia.

As I am here suggesting limitations to depletion, I will notice a case, which might otherwise have better come before us when the more vehement form of nervous apoplexy was under discussion. And as I then gave an example of large depletion successfully carried out in a person of intemperate habits, but vigorous and unexhausted constitution, this example will tell us how little can be borne under opposite circumstances, in the same apparent affection. Mr. P. a gentleman aged 63, of a strong frame and originally a good constitution, had filled a high legal office in India. Six years before he consulted me, he had undergone an attack of fever, in the course of which he was salivated, and continued in this state for a considerable time, with a gradual accession, under it, of nervous trembling, numbness of limbs, and occasional failure of thought and memory, and temporary confusion of mind. Under excitement there occurred a degree of irritability in the bladder almost amounting to incontinence of urine, which was limpid and clear. His tongue was red and dryish, his appearance pallid and unhealthy. The pulse and action of heart normal; and there had never been œdema or ascites. I regulated this gentleman's digestive organs by mild aperients, and gave him tincture of valerian in camphor mixture and compound aloetic

decoction, allowing a moderate use of wine, which, in former periods of his life, he had taken freely but not excessively. On this plan his symptoms were mitigated. But about three months afterwards, I was sent for to see him under different circumstances. He had come up to London in his usual health, eaten a moderate dinner, and gone to bed feeling comfortable; his mind clear and correct. In the night, sounds indicating dyspnœa attracted attention to his room, and he was found breathing stertorously in profound coma. In about two hours I saw him. His pulse and the action of his heart then, as before, told little. The coma was still complete, the pupils dilated, and little sensible to light; his skin generally warm. I had about eight ounces of blood taken by cupping, by which depletion his pulse sunk sufficiently to forbid its being carried further. Eight grains of calomel were laid upon his tongue, and sinapisms applied to his legs. A lavement also thrown up. No rally or improvement resulted. This was at 4 A. M.; he died at half-past 7.

In this case, I desisted from depletion at about the same point, as indicated by the pulse, at which it was suspended in Dr. Harrison and Mr. Allen's case. But I had no encouragement to resume it; and the cause of the disease, as well as the state of constitution apparently produced by it, contra-indicated the further prosecution of this measure.

No autopsy was permitted.

The phenomena of the following case belong more properly to my present subject, for though somewhat suddenly fatal it had not the strongly pronounced symptoms of apoplexia gravior, and yet was apparently of nervous origin. The subject of it was, up to his eighteenth year, a healthy well-grown young man, of a muscular frame, strong and active; until, indeed, he began to work at college with a view to a degree, having previously been far from laborious, but always of temperate habits. Then the peculiarities of his constitution developed themselves: a difficulty in giving continuous application, not from inability to fix his attention, but from intense exhaustion and a sense of fatigue produced. He struggled against this; grew thin, and, without any definite illness, faded. A year before the examination for his degree of B. A., I was consulted, and then learned and observed the above facts; and was much struck by the marked apprehension of mischief from his symptoms, in a bold, firm, and sensible young man. His pulse was small; the action of his heart normal. I gave him advice tending to prevent his fixing his attention too strongly on his discomforts, which I then presumed to be exaggerated,

and I prescribed tonics, mild aperients, and mercurials. His health improved in the above respects. In the autumn of 1840, I was sent for hastily into Berkshire to see him, where I found him under the following circumstances:—He had visited a friend sixty miles distant, and there, with moderate relative exertion, and with trifling deviations from a strict diet, had produced flatulent indigestion. Extreme exhaustion had suddenly come on, for which he had been treated reasonably by the practitioner of the place; and before he had quite recovered from this he had travelled home, by the high road. Finding himself still exhausted, he had, on the night of his arrival, taken twenty-five drops of laudanum. This increased his feeling of exhaustion. Palpitation of heart, a semidelirious state, and an intense feel of sinking, ensued. In the evening of the next day I saw him in Berkshire. He had by that time recovered out of the above exacerbation, and his only complaints then were a sense of soreness and stiffness in the head, of fluttering in the cardiac region, and pain at the epigastrium. His pulse 100, and small but regular. I found at the heart neither bruit, nor undue impulse, nor feebleness. A steady apprehension of death was marked in his own impressions respecting this attack. Out of this attack, however, he soon emerged into his usual health. The remedy which relieved him most (mild mercurials, and aperients being premised) was the ammoniated tincture of iron. During the next summer, a residence in the Isle of Wight, by my direction, with plentiful affusion of salt water, not the shower-bath, remarkably strengthened and improved him. He took his examination at the university after this, and thereby was relieved of a part of his mental difficulties. He continued, indeed, in an improved state of health, though one not differing in kind, till about eight months ago, when he received a shock which largely reproduced nervous sensations, in the death of a friend, and from that time to his own death it was observed that his wanness and pallor had increased. I believe he took for this the *tinctura ferri ammoniata*, without the precaution of previous mercurials and aperients. It was observed that he spoke very slowly, and that his thoughts, and apprehensions of the thoughts of others, were becoming more unready than before. He went down on a visit into Lincolnshire, and there he felt a return of increased exhaustion. One evening, complaining of this, he went to bed early; and not appearing at breakfast the next morning he was sought for, and found in a comatose and stertorous state, which had then not long existed, for we found he had been seen awake shortly before. Out of this comatose

state he did not rally, and he was dead in about three hours.

It is to be regretted, in the above two cases, that we have not post-mortem appearances. But in the present state of our pathology of the brain, the therapeutical question, in such cases, is not very closely connected with this inquiry. Neither tubercle, nor meningitis, nor cerebral abscess, are pointed to by the symptoms. The presence of some serous effusion is highly probable. But the nature of this phenomenon, as well as our uncertainty, in such cases, how long it may have existed before death, would make it difficult to obtain a practical conclusion from this fact, if discovered on dissection. The same remark applies to ramollissement. Under each of these suppositions the prolongation of life may be a point of immense importance; and under each, this object will, in the present state of our knowledge, be better gained at the bed-side than in the dead-house.

In the commencement of this lecture I adverted to the latter source of knowledge, as that which has given to practice its highest value and best effects; but its discoveries must not be anticipated or assumed. The researches of many eminent men have given to the treatment of thoracic and abdominal disease a basis in morbid anatomy. That epoch has not been arrived at generally in cerebral disease. Our scientific researches should continue to be aimed at this great object. But in the interim we must be contented to act, in a great degree, from more empirical resources.

With respect, then, to the treatment of the above case, the use of steel, preceded by mercurials and aperients, sea air, and affusion of cold sea water, appeared the most likely agents towards the prolongation of feeble life.

A question here may be allowed to suggest itself, why apoplexy should so often commence in sleep, when no stimulus is being applied. The fact seems explainable on the same grounds as the aggravation of dyspnoea under that state occasioning often a frightful waking up out of it, with embarrassment of the respiratory organs. Voluntary power is exerted, while we are awake, in obviating the derangement of these latter functions. Attitude is changed, expectoration is effected; we breathe in the manner and to the extent most suited to the condition and quantity of lung in use. Just so the state of assoupissement, towards which my last-mentioned patient was constantly tending, or frequently on the verge of it, had probably been a thousand times arrested by an act of thought; by the performance, perhaps, of some cerebral function rousing him before he had advanced into coma.

The following case may be admitted here, as affording a specimen of treatment, preventive it would appear, of nervous apoplexy or palsy, under a strong threatening of such states, occasioned by debilitating habits, indulged in during the youth of the patient, and admitted by him to me.

This gentleman, aged 37 years, was of the bilious temperament. He was short, well made, and had a compact sinewy figure. His eye was heavy; his countenance anxious and uneasy; his tongue red and smooth; his pulse irritable; his utterance slow and laborious. He did not exactly complain of want of strength, but he described himself as unable to walk more than a quarter of a mile at a time, from a sense of obstruction in his head, and pain and uneasiness in the loins. He spoke slowly, with evident circumspection, as if his articulation might fail him; and he collected his thoughts with difficulty. This gentleman has been relieved since that time, to the greatest degree, indeed his powers restored apparently, by a systematic use of the *spiritus ammoniæ succinatus*, mild aperients, and henbane, occasionally combined with mercurials.

There is a comatose state incident to infants, which is noticed in Dr. Gooch's admirable work on "The Diseases of Women," under the title of "some symptoms in children erroneously attributed to congestion of the brain." Some consideration of this state is allied to our present discussion; for the line is very delicately marked, and very important, which separates these cases from others requiring active depletion. I regret that I can give no more than an outline of a case which occurred to me before I had read Dr. Gooch's work, and places under the treatment and principles which he inculcates symptoms even more advanced into apparent congestion than those which he has mentioned.

An infant, aged eight months, and nursed by its mother, became feverish. The father gave to this infant two moderate doses of calomel and scammony, which appeared remarkably to depress its strength. Its motions, which had previously been healthy, became green; and having previously been plentiful, became scanty. Great debility was observed, and even paleness, a state not readily produced in infants. A full meal of its mother's milk was followed uniformly by griping and dyspnœa, threatening suffocation. The mother was a delicate person; but it was observed in the course of this case, that a more healthy nurse being obtained, the above symptoms were rather aggravated under similar circumstances than diminished. Small doses of castor oil removed the febrile heat which I have noticed, and restored healthiness of the evacuations; and this, with antispasmodics, was the only

medicinal treatment adopted by me throughout a continuance of symptoms, which, beginning in dulness and heaviness, ended in the most profound stupor, unattended, however, and unprecedented, by any indications of pain, heat of head, or convulsions. I was impressed with a belief that these symptoms depended upon indigestion and imperfect nutrition, probably resulting from the shock which ill-timed remedies had inflicted at the commencement of the indisposition; and I saw no ground for changing my view. When, however, after lasting several days, this case appeared to me desperate, it somewhat rapidly took a favourable turn. This change appeared to be mainly owing to the successful use of two remedies—one, the *spiritus ammoniæ succinatus*, given internally; the other, an *asafœtida* enema, thrown up about the same time. This, I imagine, was an infantile case of nervous apoplexy. With respect to the practice pursued, I shall regret if the successful termination of that case should exclude from the attention of my hearers the risk incurred, and the delicacy of that line, which separates such cases from others requiring the most active treatment, and often remedies of a depressing kind. A careful observation made of the exact point from which the attack, or those symptoms of it, have commenced, in regard to which the practical difficulty exists, will, in the present state of knowledge, give us more safety than a reference to any presumed diagnostics. In the above case, the shock given by the parent's injudicious remedies afforded this light to me.

With respect to nervous apoplexy considered as referrible to external influences, and not to constitutional causes, still of a physical kind, there are many forms of it. I should, indeed, vainly endeavour to embrace them in the course of a lecture. But they will generally, I believe, illustrate, with more or less concurrence, the proposition laid down in the present lecture, that the graver forms of nervous apoplexy require, strength permitting, the most active depletion; while its milder forms may best be dealt with by those soothing measures, and on those principles, which I have illustrated from the works of Dr. Kirkland. I have already pointed this out in regard to cases of insolation, classed under the head of apoplexia gravior. Let cases of this kind be compared with any given case, in which the extinction or diminution of power, and not its arrestation under spasm, may reasonably be supposed. The contrast will illustrate the difference of practice advocated, and vindicate its propriety. I will take, as an instance of such extinction or diminution of power, the exposure to an asphyxiating agent through the vapour of burning charcoal. If my

hearers will refer to the admirable case given by Dr. Babington, in the first volume of the *Medico-Chirurgical Transactions*, they will there find benefit derived, as might be expected, from certain excitants; but he will also notice a circumstance apposite to the present question, and the more valuable as it seems recorded under an expectation of an effect contrary to that which is admitted to have occurred. Twice the patient, a middle-aged man, lost blood in the course of his reanimation; each time his general state was obviously rendered less favourable by the loss. The latter removal of blood was accidental, from the displacement of a ligature. About this time it was noticed that reanimation was proceeding favourably; but under this accident, the face collapsed, and the pulse sank to a dangerous degree*.

In this case the vivifying principle of the blood having been interfered with, the directly restoring this by inhalation of oxygen gas, and the giving nervous energy for this work by galvanism, were the agents obviously and solely instrumental in the recovery.

ILLUSTRATIONS

OF THE

PATHOLOGY, DIAGNOSIS, & TREATMENT OF OPHTHALMIC AFFECTIONS.

By EDW. HOCKEN, M.D. M.R.C.S.L. &c.

[Continued from p. 276.]

A new and improved plan of treating strumous conjunctivitis. The pathology of struma. The nature and symptoms of the local affection, with the rationale of treatment.

Treatment.—This includes the treatment of the attack and the treatment of the interval, consisting of general and local treatment.

My friend Mr. Wormald is in the habit of treating many slight ophthalmic affections (especially among the out-patients of St. Bartholomew's Hos-

pital) exclusively by daubing the nitrate of silver on the outside of the lids. It was from watching the success of this practice in many cases that led me to give the remedy, applied in this way, a fair trial among my own private patients. I found that it was most successful in the forms of strumous conjunctivitis—so much so that, when combined with appropriate constitutional measures, it has never failed in my hands—and this not after the lapse of a protracted period, but, in recent cases, immediately; and, if chronic, after two or three applications. At the West of England Eye Infirmary strumous conjunctivitis is very common, and often most severe and intractable. At my request, Mr. De La Garde (one of the surgeons to that institution) placed several cases under this plan of treatment; and shortly after having commenced it, he wrote to inform me that, out of at least a dozen such cases, there was only one which was not immediately attended with the most marked success. Besides strumous conjunctivitis, I have found the nitrate of silver, applied in the way I shall immediately explain, a most valuable auxiliary in all cases where the conjunctiva and lids were much concerned, and wherever there was much intolerance of light; such as in all the strumous diseases of the eye, in catarrhal and purulent ophthalmia, in granular conjunctivitis, and simple conjunctivitis of the lids or globe.

Mode of application of the nitrate of silver*.—A clean piece of the stick of the nitrate of silver, having from one to two inches exposed, should be selected. The patient's eyelids are to be closed, and put slightly on the stretch, by applying the thumb of the left hand to the eyebrow, and gently raising the skin. The nitrate of silver is then to be passed (previously moistened) two or three times over the whole surface of the upper, and subsequently the lower eyelids, smoothly and without much pressure; bringing, not the point,

* Dr. Babington's expressions are as follow. "The pulse had risen to 120, and was strong (some wine and water given had apparently produced this effect); we therefore, in the early part of the evening, considered of the propriety of further venesection. But as the apoplectic stertor was evidently not so great, we determined not to interfere with the efforts of nature; accident, however, accomplished what we had hesitated to do, the ligature having slipped from his arm, and he lost, before it was noticed, nearly a pound of blood. The pulse sank, his countenance collapsed, and Mr. Hingeston was apprehensive that he would not survive the debilitating effect of this accidental hæmorrhage."

* The application of the nitrate of silver to the outside of the lids is a very different plan of proceeding to its introduction, either as a strong solution or in substance, between the lids. From the latter I have seen the greatest injury result, and should decidedly refuse my consent if myself the patient. Except in the purulent forms of conjunctivitis, it is a plan I utterly condemn, as cruel, injurious, and unscientific. Weak solutions, however (as j. or ij. grs. to the ʒj. of water) are sometimes highly beneficial.

but the sides of the stick of lunar caustic, in contact with the skin. The object of this application is only to blacken, and not to occasion any severer effects; and it will be found that, after a short time, as soon as the nitrate has had time fully to act on the fifth nerve, it will completely relieve the intolerance of light, the lachrymation, and, what is of the most importance, the spasmodic strivings of the orbicular muscle; and hence relieve the patient from that constant irritation and pressure which maintains and aggravates the affection.

In one of my patients, a little boy four years old, I had an opportunity of treating an attack of strumous conjunctivitis and purulent ophthalmia, in the opposite eyes, at short intervals of time. The strumous attack was subdued at once; but in about a week afterwards he was brought to me with purulent ophthalmia of the fellow organ. I at first used leeches, purging, and a strong solution of the nitrate of silver to be placed between the lids; but this treatment, although it subdued the severity of the attack, failed to cure it: it merely subsided into a chronic form. At this stage I applied the nitrate of silver to the outside of the lids, in the way described, which immediately gave a new feature to the case. He improved directly; and a second application, about a week subsequently, produced a cure in a few days.

On first seeing a case of strumous conjunctivitis, besides the application of the nitrate of silver to the outside of the lids, it is advisable to administer three or four grains of the hydrargyrum cum cretâ, or two of calomel, with one, two, or only half a grain of quinine (according to the age, &c. of the child); and follow it up, about six hours afterwards, with an appropriate dose of rhubarb, ginger, and sulphate of potash. If the smaller powder be given at night, the aperient should be delayed till next morning. Where the case is chronic, it is very serviceable to repeat this practice about twice every week or eight days; and where the child voids worms, it is best to free the intestinal canal from the nuisance by an appropriate plan of treatment.

It is not, however, sufficient merely to free the patient from ophthalmic disease for the time; the constitution must be improved, to prevent future attacks; and to accomplish this we

must strike at the root of the disorder. The general symptoms are those of debility—either a pale, pasty, bloodless condition, with flabbiness and want of tone in the solids; or, on the contrary, constitutional debility, with an excess of irritability of the nervous and vascular systems, occasioning a tendency to hectic. Both states are benefited by tonics. To improve the digestive and assimilative functions, we have recourse to hygienic and therapeutic agents. The former include diet, air, exercise, light, and clothing; the latter, tonics, purgatives, warm baths, or cold spongings, followed by brisk friction of the skin.

The diet should be nutritious, in moderate quantity, and taken at regular intervals, being well masticated; whilst every injurious or indigestible article should be studiously avoided,—such as pastry, new bread in every form, sweetmeats, crude vegetables, fruit, unless soft, fully ripe, and in small quantities, as strawberries, &c. Early hours should be enforced, both for retiring to rest and rising in the morning. A healthy situation (when possible) should be selected, with an occasional change of air, and a residence near the sea during summer. Sufficient exercise is very important; such as riding, walking, playing, &c. all in their turns; but fatigue is carefully to be avoided. The mind, also, should be kept employed, but never overworked. The body is sure to become diseased if deprived of the agency of sufficient light: hence the clear light of day and the bright sunshine must be sought and enjoyed. Exercise in the green fields combines the enjoyment of mind and body, exposure to light, a free supply of fresh air, and the stimulus of exertion. Moreover it is highly necessary to clothe the body warmly, both to encourage the functions of the skin, retain a due supply of warmth, and prevent the effects of atmospheric vicissitudes.

As purgatives, the combination of a mercurial preparation with quinine, followed by rhubarb, &c. as I have already mentioned, is the best mode of occasionally stimulating and strengthening the chylopoietic functions. Besides this, if the child be pale, and the solids deficient in tone, the ammonio-citrate of iron, in small doses, two or three times a day, should be adminis-

tered; but if the circulation be active, and the nervous system irritable, quinine, exhibited in the same manner, has succeeded best in my hands. In these latter patients cold sponging of the various parts of the entire cutaneous system successively, followed by brisk friction, I have seen most beneficial: in the former, where the skin is dry and rough, warm bathing, about once a week, also succeeded by active rubbing with a coarse towel or the flesh brush. This is but a sketch of the constitutional treatment; but having already filled several pages, I must bring these remarks to a conclusion.

If any gentleman will be kind enough to give my plan a fair trial, and report their success to me, I should feel much obliged.

15, Southampton Street,
Covent Garden.

RUPTURE OF AN OVARIAN SAC.

To the Editor of the Medical Gazette.

SIR,

THE accompanying cases appear to me very interesting: if you should entertain a similar opinion, you will oblige me by giving them a place in your journal.

I am, sir,

Your obedient servant,

ARTHUR W. DOMVILLE,
Surgeon to the Ardwick and Ancoats Dispensary,
22, Higher Ardwick, Manchester.

Nov. 12, 1842.

Case of rupture, from a full, of an ovarian sac, followed by death.

Sarah Wolstencroft, æt. 63, or thereabout, unmarried, always delicate, even from a child. Since the catamenia first appeared, there has been great irregularity in these discharges, and never, perhaps, has the secretion been of its proper quantity or colour. Thirty years since she first began to swell in the abdomen; this swelling did not increase rapidly, but, on the contrary, it very slowly advanced; but still it did advance, and at the expiration of fifteen years her abdomen had attained a large size.

It is now fifteen years since the operation of paracentesis abdominis was first performed, at which time thirty-four quarts were removed. She has been tapped four times since. The last operation was performed four years

ago, when a great quantity of little bodies resembling mustard-seeds came away; in fact, they were so numerous as to choke the canula and prevent the flow of the liquid part.

I believe Mr. Garside, of this town, performed all the operations.

Sept. 16th, 1842.—As this poor woman was employed in hanging window-blinds, the table on which she stood gave way, and she fell on her back on the floor. This happened at 10 o'clock A.M. I saw her about an hour after the accident; she was pale and sick, vomiting repeatedly, and complained of an agonizing pain above the umbilicus. Her pulse was quick and small. I prescribed stimulants; she had opium, brandy, and ammonia. She died at 5 o'clock P.M. Previous to her death she vomited a quantity of blood.

Autopsy.—September 17th I examined the body 28 hours after death. On opening the abdomen, I found that I at once came into the interior of an immense cyst, the anterior wall of which was inseparably connected with the abdominal parietes. The cyst passed down into the lumbar regions covering and connected to the kidneys; it was reflected from the abdominal parietes above to the under surface of the liver, with which it was intimately joined; in fact it required some time and trouble to bring this viscus into view, so completely was it covered by this part of the cyst. The posterior wall had various attachments with different convolutions of intestines, by cellular bands resembling the false membranes found frequently in the chest.

The cyst contained a large quantity of liquid, in which were floating innumerable little bodies, such as I have before described as resembling mustard seeds.

At the upper and posterior part of this sac there was a rupture, through which had passed two large folds of intestine (jejunum). The ruptured part corresponded with the seat of pain. There was a good deal of liquid extravasated into the abdominal cavity, also many of the floating little bodies before spoken of. There were no traces, however, of recent inflammation in any part of the abdominal viscera; the folds of jejunum within the cyst were distended with flatus, but there were no marks of increased vascularity; the

round shape was found occupying the whole lower and middle portions; extending, in fact, from the pubis to within two or three inches of the ensiform cartilage. It was composed of an immense number of cysts of all sizes: two or three large enough to contain three or four pints of fluid each; others not larger than a pea. The contents of the cysts were very various: in some the matter was colourless serum, in others it was yellow, in others as dark as coffee, and in others it was bloody. The consistency of the liquid was as varied as the colour. The walls of the cysts were of various thickness and structure; some were thin and soft, others thicker, and of a cartilaginous hardness; others vascular, and beginning in some places to soften and break down.

The anterior portion of the tumor was adherent, throughout its whole extent, to the peritoneum covering the abdominal parietes. It was also attached by a thick layer of soft lymph to the rectum, and on separating the attachment a small opening into one of the cysts was found. The cyst had ulcerated at this point, and formed an adhesion to the gut, which in time would, in all probability, have been perforated, and the contents of the sac evacuated. There were no other attachments to any of the intestines or viscera of the abdomen. The uterus and left ovary were healthy; the right was completely involved in the diseased structure, and was, no doubt, the organ in which the morbid action commenced.

Can we, in any given case, during life, predict the existence or non-existence of adhesions in ovarian dropsy? I firmly believe that this accuracy of diagnosis is, in many cases, most difficult of attainment; and in some it is quite impossible to determine.

We cannot ascertain this point from the size of the tumor, for we have seen that adhesions may occur at a very early period of the enlargement. We cannot judge from the amount of pain, with certainty; for in Wolstencroft's case the patient, I understand from her sister, never suffered so much pain as to require the use of leeches, and yet most extensive adhesions were found. In my second case the patient had suffered very great pain, and yet the tumor was free. And, lastly, we cannot always decide this question by

means of palpation or percussion: by the latter method we may possibly ascertain the boundary of the tumor, but can determine nothing as to its connections. Neither are we always much more successful by the former plan; for I have more than once known an ovarian tumor of some size appear to be fixed, which afterwards has proved to be free; and I can well conceive that an ovarian cyst may, to a certain extent, be moveable, yet nevertheless have contracted important adhesions.

The third feature in Wolstencroft's case, worthy of a passing comment, is the difficulty there was in making a diagnosis: I do not mean as to the connections of the cyst, but as to its real character. As far as the physical signs went, the case was more like ascites than ovarian dropsy. In no point of the abdomen could any solid enlargement be detected. The fluid was equally diffused; therefore, percussion where you would, there was nothing but dulness. By connecting the signs with the history of the case, we might, perhaps, have arrived at a shrewd guess as to its nature; but the diagnosis would have showed no better name than the one I have given it—a guess.

My object in making the foregoing observations is not wholly to deprecate the operation of excision; for I think that, in some cases, a surgeon may be called upon to undertake that operation. In fact, I proposed it to one of the patients I have already alluded to, in whom I found the operation free after death. Neither my patient nor her friends would consent; she was influenced by the opinion of my medical associate, who was far from sanguine as to the result.

I submit that this operation, perhaps beyond all others, requires consideration. I should not think a surgeon warranted in undertaking it because he had made the accurate diagnosis of ovarian disease; neither should I think him justified in its performance, even when he had ascertained, as far as it could be ascertained by palpation and an inquiry into the previous history, that the tumor had not contracted important adhesions. He ought, I submit, to satisfy himself that the case will be a rapid one, shortly terminating in death if something be not done to prevent such a catastrophe. Our object should be to save life, and not simply

to remove a deformity. The most sanguine advocates for excision must admit that there are many risks attending the operation. Could a man in justice jeopardise the life of his patient, by performing a formidable operation, when that patient, without it, might have lived, as mine did, for thirty years? I trow not. I readily admit that mine was a singular case; and that few, very few, are so slow in their progress as the one I have recorded; but still there are many cases that advance but tardily. If, in any given instance, we are satisfied that the case will rapidly proceed, and there are no strong reasons for believing in the existence of extensive adhesions, then our way is open: we may propose the operation, stating the risks; then leave our patient to decide.

ON THE TREATMENT OF APOPLEXY.

To the Editor of the Medical Gazette.

SIR,

I HAVE just finished the perusal of Mr. Chapman's cases and observations on the treatment of apoplexy, and on the employment of emetics in this disease, and as the subject is one of grave importance, perhaps the following brief remarks may not be altogether devoid of interest. My attention was early drawn to the treatment of apoplexy, in consequence of my paternal grandfather (the late Lieut.-Gen. Lewis) having died of the disease. At the age of 86, about 7 P. M. on the evening of his death, he was irritated at the conduct of one of his servants, and he immediately fell down, being seized with profound sopor. His countenance became pale; his breathing stertorous; the mouth was drawn to one side; the pupils were dilated, and his pulse was weak. He was quickly seen by a physician and surgeon; blood-letting was performed, and cold water poured over his head, but he expired in a few minutes.

On the 10th of June, 1839, I was hastily summoned to attend my maternal grandmother, and, on my arrival, I found her threatened with apoplexy. Her face was pale; the pulse was feeble; and she complained of vertigo and sickness. Her mother and sister

both died suddenly of this malady. She was ordered—

R Zinci Sulphat. ℥j.; Aquæ. Destillata fʒxii.; Fiat haustus statim capiendus.

In about twenty minutes vomiting ensued, and as soon as it had ceased she took—

R Pulv. Jalapæ. gr. xvi.; Potassæ. Tart. ʒii. Spirit. Ammon. Aromat. fʒss.; Infus. Sennæ Comp. fʒvi.; Aq. Pimentæ, fʒvi.; Fiat haustus.

This produced free purging; the vertigo diminished, and at 8 P.M. she fell asleep, and rose quite well on the following morning. Since this period she has had four similar attacks, and in all of them the above-mentioned treatment has been adopted with the same good result.

I have seen numerous cases of this description, both at home and abroad, and I have invariably pursued this mode of treatment, except that, in some instances, blisters or cupping were employed. On the other hand, candour obliges me to state, that in those cases in which the skin was hot, the face flushed, the breathing sonorous, and the pulse full and strong, I have witnessed the best effects from bleeding, croton oil, enema alôes, spirit lotion to the head, and mustard sinapisms to the feet.

Dr. M. Hall (Principles of Medicine, p. 256, 1837) asserts that there is great tolerance of loss of blood in mere cerebral congestion, while in cases of actual rupture he says the system is dangerously susceptible of its loss. He confirms the diagnosis to be frequently difficult, although he mentions the so-called distinctive symptoms. Abercrombie advises bleeding in all cases, for, in his admirable work on Diseases of the Brain, &c., he says, "there are no symptoms which characterise a distinct class of apoplectic affections which, in their nature, do not admit of blood-letting." And it is not to be denied that the profession, as a body, is thoroughly imbued with his views. It appears to me that the whole subject requires to be investigated anew.

I am, sir,

Your obedient servant,

T. C. LEWIS,

House-Surgeon to Wolverhampton Dispensary
and Casualty Hospital.

Nov. 15, 1842.

MEDICAL GAZETTE.

Friday, November 25, 1842.

"Licet omnibus, licet etiam mihi, dignitatem
Artis Medicæ tueri; potestas modo veniendi in
 publicum sit, dicendi periculum non recuso."

CICERO.

SANITARY STATE OF BRITISH TOWNS.

WHEN we look at those pictures of life as it might be, which are drawn by poets and moralists, and life as it is, drawn by Union surgeons and relieving officers, nothing is more striking than the contrast between the delineations of decent poverty, clean though patched, given by the former, and the squalid indigence represented by the latter. Yet each picture may be true; for, like the knights in the story, the controversialists are looking at opposite sides of the shield. Great, indeed, is the difference between the poor of the poet, who

"lived in a cottage far retired,
 Among the windings of a woody vale;
 By solitude and deep surrounding shades,
 But more by bashful modesty concealed;"

and the poor of Whitechapel, as described by Mr. John Liddle, in the Report on which we commented four weeks ago*.

Yet, as both these varieties of poverty exist, the question naturally springs up, what are the obstacles which prevent the one from rising to the level of the other?

In the first place, then, in many or most towns there is a deficiency of water to an extent scarcely credible. Even in London there are districts which are wretchedly supplied. In Whitechapel, water is not laid on to the houses occupied by the labouring classes, but they fetch it from a plug in the courts. The trouble of doing

this makes water scarce in their dwellings; and in consequence, the filth of the Whitechapel poor reminds one rather of some mediæval city, the constant prey of plague and dysentery, than of the metropolis of the world in the nineteenth century.

"When I have occasion to visit their rooms," says Mr. J. Liddle, "I find they have only a very scanty supply of water in their tubs. When they are washing, the smell of the dirt mixed with the soap is the most offensive of all the smells I have to encounter. They merely pass dirty linen through very dirty water. The smell of the linen itself, when so washed, is very offensive, and must have an injurious effect on the health of the occupants. The filth of their dwellings is excessive; so is their personal filth. When they attend my surgery, I am always obliged to have the door open. When I am coming down stairs from my parlour, I know at the distance of a flight of stories whether there are any poor patients in the surgery."

There is evidence also of the want of water in Manchester, the Truro Union, the Audley district of the Newcastle Union in Staffordshire, the Dunmow, Bishop's Stortford, Lexden, and Winstree, Unions; in Glasgow, Aberdeen, Stirling, Dundee, Greenock, Ayr, Arbroath, &c. &c.

In Edinburgh the poor have to travel a considerable distance for water, and afterwards carry it up five, six, or seven stair. In Tranent, Dr. S. Scott Alison has seen women fighting for water.

Even in Bath, which is comparatively well supplied with water, the poor are often obliged to fetch it from a distance. To the indolent this difficulty is an impossibility; even to the active it is a loss. In Paris, according to Mr. Chadwick, the cost of filtered water conveyed into houses by the carriers is two sous the pailful, or nine shillings a ton; while the highest price charged by the water companies in London is sixpence a ton. Such is the difference between individual and

* Report to Her Majesty's Principal Secretary of State for the Home Department, from the Poor Law Commissioners, on an inquiry into the sanitary condition of the labouring population of Great Britain; with appendices, &c.

combined labour; between rude manual exertion, and the machines of Savary and Watt!

It seems that the Poor Law Commissioners have been urgently requested to supply villages with water by allowing the necessary charges to be defrayed out of the poor-rates; "but they could only express their regret that the law gave them no power to allow such a mode of obtaining the benefit sought." At present the poor-law is potent only for ill: water gruel, but no water. *Ah! qu' il est difficile de faire le bien; il n'y a que le mal de facile à faire.*

The most striking instance of habitual non-washing to be met with in this Report, is at Edinburgh, where Mr. Chadwick talks of a question and answer more than once repeated: "When were you last washed?"—"When I was last in prison." So that recommitment to jail might be looked upon in these wynds as a blessing in disguise, being the sole or readiest portal to soap, water, and a towel!

The next difficulty experienced by the poor is that of obtaining *good* water; the supply may be plentiful, but bad. Indeed, this is a constant and just complaint in London, not only among the lower, but the middle classes; and the remedy will never be complete till the office of supplying the kingdom with water is taken out of the hands of private companies, and becomes a national concern, instead of the object of petty huckstering among rival dealers.

The effects of bad water are sometimes shown on a large scale. Thus the troops at Cork, being supplied with water mixed with the contents of sewers, and rendered brackish by the tide, suffered from dysentery: Mr. Bell, their surgeon, suspecting the cause, let water be fetched from the Lady's Well; *sublatâ causâ, tollitur effectus*—the dysentery disappeared.

At Paris, again, Parent-Duchâtelet ascertained that the proportion of sick at the prison of St. Lazarus was greater even than at other badly situated prisons. He found that the wooden cistern was in bad order, and full of *conservæ*, and that the water had a "detestable and truly repulsive taste." The water, moreover, of this hospital resembles that of the Salpêtrière in the quantity of sulphate of lime and purgative salts which it contains; and in the hospital, as well as the *hospice*, chronic diarrhœa is a prevalent disease.

Another point in which the poor as they are differ from the poor as they might be, is the bad ventilation of their places of work. The fact, that air to be wholesome must be renewed, is by no means universally diffused; and masters, not deficient in humanity, waste the lives of their workmen for want of a ventilation which might be procured by the profits of a week. "My people," says the Hebrew Prophet, "are destroyed for lack of knowledge." Place a plain scientific truth before a man, and spleen, distrust, nay avarice itself, in time give way; and physiology meets with almost as ready a reception as the multiplication table.

Mr. Thomas Brownlow, a tailor, aged 52, gives some interesting evidence on this topic, which is to be found in the Report. When a journeyman, he worked at Messrs. Allen's of Old Broad-street, with 80 or 100 men, and at the Stultzes, where the number was about 250. The men at Allen's sat nearly knee to knee: what with animal caloric, and the heat of the irons, the temperature was twenty or thirty degrees higher than that of the air outside; young men from the country fainted from the heat and closeness, and in the coldest winter nights large thick tallow candles melted and fell over from the heat.

The worse the air, the worse the habits of the men who work in it; depression calls for stimulus, and gin and

beer supply, in a destructive manner, the want of oxygen. Thus, in the shops of which Brownlow speaks, gin was brought in four times a day; at 7 and 11 in the morning, and at 3 and 5 in the afternoon.

In country places, where tailors work alone, or but two or three together, spirits and beer are far less drunk.

Besides the uneasy feverish state which must be produced by the alternate depression and exaltation of the London system, the journeyman is worn out ten years sooner; at forty he is older in constitution than the country workman is at fifty. In point of fact, the London tailor is superannuated at fifty years of age, and is thought unfit to do a day's work.

John Fowler, a superannuated tailor, who comments on Brownlow's evidence, agrees with him generally, but thinks that less beer and spirits are now consumed in the workshops, and observes that the crowding of the large shops occurs only during the season.

Charles Dobson, a man of 58, who has been a tailor since he was 16, has always lived in the country; yet even he has suffered from working with seven or eight men whom he employed, in a close shop. Though there was very little drinking, the men grew giddy, and in warm weather he felt faint, from the closeness, the stoves, and the hot irons. He has known many men, more than fifty years old, who are perfectly able to go on working; as they advance in age, they are obliged to give up, from defective sight, but from nothing else.

The remedy for these evils is an obvious one—ventilate the rooms. It is satisfactory to say that this has been done by the Stultzes, and also in some shops at Glasgow.

Milliners and dress-makers are equally injured by the defective ventilation of the crowded rooms in which they work; with the additional detri-

ment of the candles and gas-lights which glare over their midnight toils: for, while tailors usually leave their shops at 7 or 8, milliners slave on to an indefinite hour.

Nor are the sleeping-rooms of the working classes a bit better. In Aberdeen, according to Mr. Isaac Gilchrist, a surgeon of the town, six, eight, or ten persons not unfrequently occupy one room; and these are often single women, employed at the manufactories during the day, and huddled together at night.

If any one wishes, however, to know how closely human beings may be packed together, he should read Dr. Mitchell's account of a lodging-shop, as it is termed, for miners. In a room eighteen feet by fifteen, he found fourteen beds; one half being supported on posts, and placed exactly over the remaining half. Each of these beds was intended for two men, but when the mines are in full play, they are capable of receiving three men each, and, in case of need, a boy might lie across at their feet!

Dr. Mitchell says that 39 or 40 persons might have slept there; but it is obvious that, if his previous account is correct, 56 would be the possible limit. How even the smaller number can live through the night, is inexplicable. He thinks, with great probability, that these lodging-houses are more destructive than the air of the mines. William Eddy, a miner, gives an account of one of these crowded sties, in which he was wont to lie. Dr. Mitchell's supposition was realized there, for a bed often contained three of these human swine, besides one at the foot. "The breathing at night, when all were in bed, was dreadful."

Miners are worn out soon after forty years of age; but how much of this premature decay is to be attributed to the lodging-shops, and how much to work in the mines, it is not for

physician nor physiologist to determine.

It is clear that all the evil influences which we have disussed in the present article admit of remedies; either from private benevolence or legislative enactment. When the cholera spread terror among the opulent classes, the dwellings of the indigent were purified by force; could not this be done to avert diseases, which, though less suddenly sweeping, are more permanently destructive? The poor, said a philanthropist, are the children of the state; and it might be expedient, in some cases, to treat them like children, and guide them, when they cannot be taught. Still more necessary is it to set bounds to the cupidity of masters and landlords, and prevent them from coining blood for drachmas.

CLINICAL LECTURES,

Delivered at St. Thomas's Hospital,

By FREDERICK TYRRELL, Esq.

Surgeon and Lecturer on Clinical Surgery, at St. Thomas's Hospital School.

LECTURE II.

On Feigned Diseases.

IN a former lecture allusion was cursorily made to the general laws in which the student should seek for guidance in determining the character of any presenting case, or, in more professional phraseology, in the formation of diagnosis. Since, however, these laws are weakened by numerous exceptions, and beset by many ambiguities when practically applied, it becomes desirable, before explaining the best method of collectively surveying the particulars of a case, or *taking* a case, to attempt the removal of some of these perplexities, by indicating the avenues through which, in varied and subtle forms, imposition, fallacy, and error, may stigmatize reputation, and contaminate the conclusions of the mind. If all young practitioners were to proceed on the plan of estimating every example of disease, whatever its phaze or grade of intensity, as a separate essence or entity, characterized invariably and necessarily by an assemblage of definite particulars or phenomena, like a figure in geometry, or an experiment in chemistry, no instance would occur in which a manufactured story of subjective incidents

could usurp the place of facts and real occurrences. There is nothing imaginary or extravagant in the belief, that, even with the knowledge which may be rightly viewed as at present well understood and firmly established in medical science, it is quite possible for the student, within the period ordinarily allotted to his education, so to arm his mind with practical learning, and improve his capacity of observation, as to elevate himself into near approach to this supposed standard, before the commencement of those real scenes in which he is required to think and act for himself. Against the practicability of attaining this position, it may be urged, as an apparently valid objection, that, in the living organism, like causes are not always attended with like sequences; phenomena which may be symptoms of one state may equally characterize another condition of disease, both apparently similar, but in reality distinguished by essential and important differences. How, therefore, is the student to direct his course in safety between these manifold dangers of false diagnosis, and the unhappy consequences of a misconceived and misdirected treatment? But the fact is, that, notwithstanding all that we have said of the uncertainties of medical practice, the obscurity which overhangs the action of remedies, and the multiplicity of conditions which the correct application of any, the simplest remedy, involves, there are landmarks in the true philosophy of diagnosis which guide the observant mind to conclusions of great exactness. In the preceding lecture this subject was exemplified by two cases of ulcer of the leg, both strikingly similar as regarded external characters, but of which one owed its appearance to irritation acting on, and confined to the part, while the other was equally dependent upon causes of disturbance operating through the channel of the general system. If, then, it be quite practicable to discriminate between such cases, whatever the gradations of intensity or difference under which they occur, it is certain that, in every instance, the practitioner may place himself on a clear and intelligible vantage ground from which to direct the scheme of treatment. It is this accurate recognition of the conditions of disease that should engage the aspiration of every scientific practitioner. This is the eminence to which experience exalts the veteran in the warfare of actual practice. But the most fertile and frequent source of difficulty, in the prompt and certain recognition of disease, which harasses the old and experienced, as much as it discourages and perplexes the junior practitioner, is unquestionably referrible to the circumstance, that diseases seldom or never occur in a separate and isolated state. The conditions, upon the presence of which one may depend, may

be so closely interwoven with those of another, that the resulting symptoms may assume a compound or mean character, which, distinctive of neither, yet belonging to each, may conduct to very erroneous inferences of diagnosis. In the succeeding lectures it will be my duty to introduce you, as far as possible, into an acquaintance with those principles and tact which unobservant experience would consume many years in accumulating.

I have thought it desirable to offer here a few general observations, before proceeding more immediately to the business of the present lecture—that, namely, of considering the several sources from which fallacious and inaccurate evidence may obstruct the formation of correct judgment or sound diagnosis in the ordinary examination of disease.

There are instances, by no means infrequent in occurrence, in which persons affected with disease exercise a searching inquiry into all forms of books, without ceremony as to their antiquity or modernness, in which they are likely to be rewarded with an account of their case. They become thus philosophers in vain imagination, and soon assimilate their case to the portraiture of suffering which some favourite quack author may have fervidly and eloquently drawn. Thus impressed with a well and clearly conceived notion of their own distressing state, they approach the medical attendant with such a fluent and compactly modelled statement of their own infirmities, as to convince him that they positively labour under the disease the symptoms of which they so minutely and accurately enumerate.

Gentlemen, in such cases there is no designed imposture: a false impression is actually wrought upon the enfeebled imagination of the sufferer; and this disordered impression it is which moulds and animates his story. Fortify yourselves against the baneful errors into which a tale handled with such skill and dexterity would inevitably involve the incompetent and ill-informed practitioner; nor falsely impute to an innocent patient the intention or desire of decorating the history of his case with garbled and counterfeit incidents as unreal in occurrence as they are plausibly linked in the picture which he offers of his case: this were an error as unhappy as the other would be dangerous.

In periods of greater ignorance among medical practitioners than that in which we live, it was a circumstance which seldom happened that mere sympathetic signs and affections, which stand only in a remote and indirect relation to the real disease, were clearly and intelligently discriminated from the substantive seat and cause of distress. That painful sensation, having its apparent residence in the knee, which is so remarkably

constant in hip-diseases of scrofulous children, was oftentimes regarded, and positively treated, as a morbid action originating in, and confined to, the part itself; and no conception was ever formed of its dependence upon some other and remoter source of mischief—remoter, that is, from the sphere of careless, idle, and uninquisitive observation.

That annoying irritability and pain which so frequently affects the glans penis under circumstances of stone in the bladder, was, with equal error and discredit, ranged in the ill-selected category of *bona fide* disease.

You must not forget that the human body, whose mechanism is undoubtedly the subject of your daily study and admiration, and whose derangements you will soon discover will be the absorbing topics of your nightly reflections, is not an automatic compound of integral and independent elements, between which no communion or community, either of pleasure or of pain, subsists, like the complexly partitioned habitation of Alcyonidal Polyps, but is rather an organism whose component structures, alike remote and proximate, are united most wonderfully and intricately together by bonds of intimate sympathy. The universal prevalence of this sympathy renders it impossible that one organ or part in the general whole could submit to the ravages of disease without involving in a common disturbance the component systems of the body. These indications of sympathy are not unfrequently confusing obscurities between the mind and its arrival at correct conclusions in diagnosis. Take care lest you also fall under the condemnation which we have just pronounced upon the mistakes of our less tutored predecessors, and confound the secondary indications of sympathy with the primary realities of disease. But it is extremely important to understand that these remote pains of sympathy are not fictitious, or pretended for the ends of deception and gain: they are truly physical manifestations of disease. There is no class of diseases with which I am acquainted in which it is so important, in order to an accurate formation of diagnosis, to distinguish the actually local from the constitutional malady, as in that which is known as the *hysterical*. A part may be the seat of the most acute pain, and yet be in a state of perfect freedom from organic disease, but the vehement expressions which the patient may employ in the description of her suffering, when the finger approaches the affected part, may readily invite the unpractised observer of disease into a learned scheme of local treatment, as creditable to his honourable fame as it was advantageous and conducive to the welfare of his patient! I sincerely hope, and confidently believe, that it will never be said of any of you, who enjoy the fertile advantages for the cultivation of

medical study which this extensive institution affords, that he has mistaken the local sympathies of hysteria, however obscure their form or protean their character, for the signs of an actually existing disease.

But of all the numerous difficulties which are calculated to bring into discredit the judgment and character of a medical man, there is not one, that I have yet known, which is attended by circumstances of greater mortification than that in which a physician or surgeon is surreptitiously drawn into the position of mistaking the affected tale, the artful assumptions, and the adroit trickery of a designing impostor, for the expression of an actually felt pain, or the outbreak of real disease.

All men, as well in private as in public practice, are exposed to liabilities of imposition by persons who *feign* the character of disease. Those, however, who are engaged in the medical practice of public institutions, in the army or navy, or those who devote themselves to the medical attendance of clubs, or other large assemblies of individuals or families on the club system among the crowded population of mining and manufacturing districts, are more particularly those upon whom this species of imposture is most frequently practised. Since many of you whom I now have the pleasure to address may be ultimately carried into one or other of these several destinations which await the youthful members of our profession, our time will be found not to have been misspent if I present you with a few points, and recount to you a few of the many instances of attempted imposition and fraud which a long and active career of private and public engagements in my profession has brought within the sphere of my notice.

It was formerly observed that the majority of the phases and forms which disease assumes in the human subject is distinguishable by an assemblage of more or less clearly defined particulars. By all modern as well as antiquated authors in our science these are known as the pathognomonic signs of a disease. The presence or supervention of another disease whose signs may simulate the character, or present some resemblance to those indicative of the pre-existing affection, by introducing complication or obscurity into the picture afforded by the original marks, may obviously augment the difficulty of recognizing their character. But within certain limits, it may be repeated, that every practitioner, how young or inexperienced soever he may be, may supply himself with abundant means by which to obviate the unpleasantness which a judgment, as formally as it was, perhaps, falsely pronounced in regard to these cases of assumed diseases, will infallibly entail. The method of detection, in such cases, resolves itself

into two well-marked divisions; of which one may be described as a prompt tact and acuteness in discriminating the real from the fictitious, the exaggerated representation from the actual measure of suffering, the indisputable substance from the verbal shadow of the disease, which a long course of observant experience may ensure to the older practitioner; whilst the other may be emphatically denominated the method by scientific analysis. This last I introduce in terms of anxious recommendation, not on the score only that it is the best calculated to secure for you a safe exemption from the mortifying errors, and staining disgrace, into which the jugglery of an impostor may perchance entangle you, but rather on the higher ground of the direct tendency which it has of disciplining the mind into a logical and consecutive method of thinking, and of exercising its faculties of apprehension and reasoning on a plan, and in conformity with a process, which, of all others, is the most fitted to improve its powers, and teach it that precision of analysis which accuracy, either in determining the nature, or in estimating the combined value of any mass of evidence, under all circumstances, requires. For the purpose of illustration, let it be supposed that a case of an obscure nature is brought for examination, and that the surgeon reasons upon it in this way.

This person declares that he suffers under the disease A. From some of the symptoms which he describes, I am rather inclined to believe that the case is really one of the disease A. But there is an obstacle of a two-fold character which I feel I must surmount before I can with safety repose full confidence in this incipient belief; the first of which is, that the account which he has given me of the situation of the mischief, and the direction in which the sympathetic pains radiate, and the order of time in which the best indications which are usually said to mark the progress of the case have appeared, have not a sufficiently close correspondence with the account which the best authors have offered, or which my experience would induce me to believe as the most correct of this said disease A. The other is, that there are two other diseases, M and N, between which and the present case I could not confidently mark out any definite limit of distinction. Now the question is, to which of these three examples of disease, A, M, and N, does this case really belong, and if to neither, what alternative supposition is there left me? I suppose only that of believing that it is no case at all—unless, indeed, it be admitted as a very fine instance of humbug—for the old classic adage says, "*ex nihilo nil fit.*" Observe, I pray you, gentlemen, that suspicion at this stage of the examination puts forth her inquisitive whis-

pers; and the imposture is being arraigned before the tribunal of justice. The examiner proceeds and says:—Now from observation and reading I know that the disease A is invariably distinguished by the symptoms B, C, and D, and generally, also, E and F; but according to this person's account, C and D, the most important symptoms, are really not mentioned or noticed; while E and F are portrayed in very extravagant language: but the most anomalous discrepancy of any is, that the sign B, which is said by every one to happen at the very earliest commencement of the disease, has positively, in this case, occurred at the end, almost, of the changes through which the disease has passed, even several days after E and F, which are remote but by no means necessary consequences.

But it is really very odd what this case can be. It might certainly be an obscure form of M; but then, other very important signs, G and H, ought to be present, and very prominent too; and B, which happened so late in this case, should have presented only in a very minor degree, and at a very different stage of its course. And it cannot be the disease N, for then C and D ought to have been very prominent; but they are here altogether absent. But there is one other consideration, which I view as a very serious one, against the history which this man has drawn of his case. The *character* of the symptoms which are present is very unlike that of the reality. He says that the pain in the symptom B is very acute, and aggravated considerably by the slightest pressure.

Now it ought orthodoxly to be, that the pain should be of an obtuse quality, and that relief rather than pain should be experienced on pressure. Then what judgment can I pronounce with respect to the nature of this case? There are numerous and unequivocal flaws in the chain of the evidence. There are contradictions of time and character in the reputed symptoms. There is, in fact, in the collective aspect of the case, an air of inversion and deceit, which excites my suspicion. Is it, or is it not, a case of imposture? or is it a defective image of disease, which a morbid imagination has incoherently attempted to produce? An instance in which considerable difficulty was felt in the establishment of diagnosis has been thus hypothetically pictured, with a view to illustrate, by the assistance of a direct example, that path of analytic inquiry which the mind pursues, in closely and seriously tracing out the weight and tendency of any present sum of particulars. It is that process which I earnestly recommend for your adoption and imitation in every case, however simple or clear its character. Think, in every instance, what are the legitimate

as contradistinguished from the spurious manifestations of disease, before closing the process of investigation; and the occurrence of error will be well guarded against.

Cases of feigned disease present the most numerous and diversified possible shades of form and character.

I recollect a case of a woman, many years since, in this hospital, who obtained admission for a sore on the breast, which was supposed to partake of a malignant character. But after some time it was found to assume very singular intermissions, which came on after the proposal of an operation for the removal of the breast. The proposal was founded upon the suspicion that the case was periodically aggravated by some artificial means, for it was always found that when the necessity for the operation was strongly pressed, the sore rapidly improved, but if overlooked for a short time it would again relapse into a very irritable and painful state.

The mystic fluctuations of this case were shortly afterwards explained by the discovery of a portion of Emp. Lyttæ in the adjacent cupboard; so that it became better or worse according to whether this irritating agent was applied or not. It was by no means difficult to understand the motive which prompted to imposture in this instance. Immediately that doubt or suspicion is raised in the examination of any case, let the question be at once settled whether there can be any strong motive in the person for the affectation of illness. If the motive be probable and evident, suspicion should be the more strongly entertained. In the example which has just been related, who could have doubted that the thoughts of the lady were ardently set upon the luxuries of a comfortable bed, the cleanliness of a well ventilated apartment, the exemption from care and labour, which the liberal charity of an hospital conferred—in fact, the bliss of idleness?

In regard to the locality which this case should occupy in the nosology of feigned disease, it may be correctly enough classified under that genus of imposture which may be called deceit by aggravation, for the sore here *originated* without the concurrence of the woman, but was subsequently *aggravated* by the fraudulent and intentional application of irritating substances. The case therefore was not feigned. But the following is a remarkable instance of a disease, artificial and ingeniously produced, to accomplish the object of deception.

A butcher, who although himself attached to his country, cared little about its protection from the aggression of foes who may have threatened the annihilation of its peace and independence, began to tremble under the pangs of dreadful apprehension, when the levying company arrived to draft him for the ser-

vice of the Militia. In proportion, however, as his patriotism dissolved away into cowardice, his faculty of invention grew more active, and he became very anxious that his case should fall into that comfortable crevice, in the conscriptive law of our country, which excuses on the plea of corporal disability. "He reasoned by analogy, and thought, seasonably enough, of the process of inflating" the meat in preparation for the market: it accordingly occurred to him, that if he were to make a small and delicate aperture, somewhere in the vicinity of the loose integument of the scrotum, and blow into it, by means of a tobacco pipe, or some such instrument, it would have the effect of producing a very extraordinary appearance among the neighbouring parts; such indeed as to deceive the eye of the most expert surgeon.

The experiment succeeded, and he presented himself amid the groans and difficulties of progression. But the game was lost, for the nature of his prodigious scrotum was soon discerned, and the sweets of his civil life were soon exchanged for the glories of the military profession.

Here is another case, happening in my own private practice, which I was called upon to treat, with all the gravity and anxiety which the afflicted tenderness and wounded love of parental feeling could possibly infuse. A young lady, in the most comfortable and opulent circumstances, became the subject of sore leg, and had been confined to her bed for a period of nearly eighteen months; and it was found by the numerous surgeons who had successively waited upon her, that nothing would succeed in permanently improving the ulcer, for which she had been so long confined. Perceiving nothing either in the condition of the part, or the state of the general health, which could be interpreted into an adequate reason or cause for such extreme unwillingness on the part of this said sore to get well, I immediately asked myself the question, what motive for deception can there possibly be in this case? This nice young lady surely could never think of preferring the tedium and sickening monotony of a bed-ridden life for the varied pleasures of home and society, which, if in health, without limits she might enjoy. By a little tender and inquisitive conversation at her bed-side, I afterwards prevailed upon her to give me a real and true history of her case. She now told me, that as her mamma, when she was able to walk and in health, *would* persist in making her walk with the nurse in Kensington Gardens every day, a species of exercise against which she had the strongest aversion, she was determined to keep herself in bed by sprinkling a few warm cinders occasionally over the sore. Who could have dreamt that the whims and

caprices of an over-indulged young lady could have been combined, by revengeful obstinacy, into an adequate motive for such a protracted course of self-inflicted punishment? Amid the anxieties of future practice you would all do well to remember the useful lesson which this case inculcates. Never forget that, frequently, there is very subtle *method* in the hysteric tricks of tender young ladies.

Some years since a remarkable case occurred in the hospital, in which the late Sir A. Cooper was consulted. A woman came in with an alleged tumor in the right iliac fossa, which, she said, was caused by the escape of a fœtus, by rupture of the uterus during labour, many years before; and she proposed to submit to an operation for its extraction, as she was much alarmed lest something serious should result in consequence of the severe suffering she experienced. Sir A. Cooper, even before I suggested to him the suspicions which my own examinations had generated, finding that he could not discover this tumor in the iliac fossa, which the woman described, taking the evidence furnished by the areolæ, the breasts, the rugous state of the abdominal integument, and with that penetrating acumen of diagnosis which his vast experience, his well-disciplined mind, and his energetic resolve to unveil the truth in all instances of doubt and obscurity, had enabled him to acquire, at once concluded that the case was one of imposition; and not, as some surgeons had supposed, one of extra-uterine foetation.

It is not possible, in some cases, to detect the motive for feigning, even when the imposition is detected, as the following case will show.

I was requested to see a young gentleman who, it was stated, had been suffering very severely from facute pain in the lower extremities, which was greatly augmented by pressure or motion of any kind: this had existed for seventeen months, and had resisted a great variety of treatment under various medical men. On seeing this patient, and examining the limb, I elicited a train of symptoms which did not indicate any disease which I had seen or heard of; but knowing that the boy (who had been adopted by an opulent uncle) had every indulgence and enjoyment, I did not at first suspect any imposition. On deliberate consideration, however, such suspicion arose; and on the next day I made a more extended inquiry and examination, which confirmed my suspicion; and I accordingly expressed my opinion to the uncle, who was at the moment excessively angry with me for entertaining the idea of the disease being feigned. It was decided that a further opinion should be sought for, and the most

experienced in the metropolis was obtained, which confirmed that which I had expressed; and I then desired to have an opportunity of exposing the imposition, about which the uncle was even then incredulous; but he agreed to promote any plan I thought requisite to elicit the truth. My plan consisted in apparent coincidence with the patient as to the existence of a severe and obstinate disease, on which, however, I decided that nothing but an operation of the most formidable kind could effect relief; and that I wished him, therefore, to be removed to the neighbourhood of St. Thomas's, where I could have the straps, table, strong men, &c. &c.: making a long detail of what would be required in so difficult and dangerous a case. I succeeded in frightening my patient as much as I wished; and, after some difficulty, yielded to his earnest and repeated solicitations to try some remedy previous to an operation. I pretended I would try a very powerful remedy, provided the uncle would himself administer it, as I could not trust it in the hands of a servant in consequence of the damage from an over dose. I stated, further, that if it did not operate beneficially in ten doses it must be abandoned. The medicine ordered was a little ammoniated tincture of valerian and some castor combined, three drops to be given in a table spoonful of distilled water every two hours; and about sixteen hours after I again saw the patient, walking comfortably about his room, free from pain, being the first time he had left his bed or couch for more than twelve months. He declared that the medicine had produced a most extraordinary sensation internally after the first two or three doses, from which time his pains, &c. had rapidly passed away. His uncle and myself were now perfectly satisfied of his having feigned; though, perhaps, some of the present professors of homoeopathy would not only insist upon the possibility of the cure by such a dose, but probably complain of its magnitude. We never could detect any motive for this imposition; for the boy deprived himself of all kinds of amusement, such as field sports, &c., of which he was very fond, and which his uncle's means and property afforded him unusual opportunities of enjoying.

I might thus long amuse, and I hope instruct you, gentlemen, by withdrawing from the accumulated stores of my own experience of the difficulties of medical practice, cases illustrative of the varied shades which imposition or fictitious disease may assume.

Those of you whose intention it is to engage in the medical department of the army or navy, should recollect that the class of malingerers or skulkers is numerous. They look forward to the comforts of retired and civil life. They affect illness in order to ob-

tain escape from the lash of apprehended or adjudged punishment.

If you should ever visit the land of slavery, think of the pardonable motives which may influence the wretched beings who yet groan under thralldom and tyranny of abject servitude. They desecrate the land, and contemplate the delights, of liberty. They resolve to purchase it, even at the expense of health. They consume the mud and filth beneath their feet; and thus consign themselves unto the more tolerable condition of sickness and bodily distress, in order to emancipate themselves from the mental degradation of slavery.

If you are destined for the civil practice of our profession, study the principles of social life—the character of the human mind—the springs of human action; recollect the compassion which poverty claims at your hands, and elevate yourselves into an acquaintance with the philosophy of real life; and you will qualify yourselves the more fully for the useful practice of that elevated profession within whose pale you will soon be received.

REPORT OF
AN EXAMINATION AND ANALYSIS
OF THE "AQUA CHALYBEATA"
OF MESSRS. BEWLEY AND EVANS,
Pharmaceutical Chemists, &c. Dublin.

By ANDREW URE, M.D.F.R.S.
Professor of Chemistry, and Analytical Chemist.

THIS water consists of citrate of iron, highly charged with carbonic acid gas, and rendered peculiarly palatable by means of a little aromatized syrup. Six fluid ounces of it are contained in each bottle, and these afford, on analysis, seven grains and nine-tenths of a grain of peroxide of iron, corresponding to thirteen and a half grains of citrate of iron, present in the bottle, when prepared. This organic salt is therefore in accordance, as to composition, with the latest researches of Liebig; as also with mine, published in the Philosophical Transactions for 1822. The atomic weight of citric acid, as it exists in the citrate of silver, is, according to the German chemist, 165 ($C_{12} H_{10} O_{11}$) taking the British atomic weights for carbon and oxygen: and since this acid is tribasic (in his view) it will combine with 3 atoms of peroxide of iron = $3 + 79 = 237$, now $237 : 165 :: 7.9 : 5.5$, as given above. By my experiments on citric acid (Philosophical Transactions), its atomic weight with one atom of water, as in the citrate of silver, is 57 to hydrogen 1, which combines with one atom of peroxide of iron = 79, to form 136 of the ferric citrate, being proportions differing little from the preced-

ing. This chalybeate water cannot change by carriage or keeping, as the oxide of iron is held combined by so strange an affinity as to resist separation by the most powerful decomposing agents, such as the succinate and benzoate of ammonia, even with ammonia in excess; means which precipitate oxide of iron from all its inorganic saline compounds.

The Aqua chalybeata contains no ammonia, for when heated with caustic potassa it affords no traces of the volatile alkali either by smell or by chemical reagents.

Two ounces of this water are an average dose, and contain 2 grains and $\frac{2}{3}$ of a grain of ferric oxide.

From the mildness of this preparation, and its chemical permanence, it promises to form the most efficacious of chalybeate medicines.

13, Charlotte-street, Bedford Square,
November 18, 1842.

EXAMINATION FOR HONOURS

AT APOTHECARIES' HALL.

To the Editor of the Medical Gazette.

SIR,

MAY I ask the favour of your insertion of the enclosed questions given by Dr. Copland to the students who presented themselves as candidates for honours in Materia Medica and Therapeutics at the Apothecaries' Hall on the 31st of October last, in your valuable periodical; and also the names of the successful candidates. By so doing you will render us an act of kindness and justice.

I am, sir,

Your obedient servant,

HENRY MARCH WEBB,
Exhibitor in Medicine of the London University.

Guy's Hospital, Nov. 21, 1842.

1. Describe the preparation of the Antimonii Potassio-tartras, and the chemical changes which take place in the process.

2. Give the uses of this preparation: mention the states of disease in which it is most beneficial; and the medicines with which it is most advantageously conjoined in order to secure its good effects.

3. Describe the preparation of the Potassii Iodidum, and the chemical changes which take place in the process,—also the adulterations of it, and the best means of detecting them.

4. Enumerate the several preparations of Iodine, officinal and others; and state the several conditions of disease in which they are serviceable, with their doses, and the most usual modes of combining and exhibiting them.

5. Enumerate those medicines which act

as expectorants; arrange them according to their modes of operation, and state what you know of their physiological effects.

6. To what states of pulmonary disease are the individual members of this class more especially appropriate.

7. Enumerate the medicines which act as diuretics, with their doses,—and mention their physiological operation, and the best modes of exhibiting and combining them so as to secure their full effects.

8. Enumerate the medicines which may be employed to produce an emmenagogue effect; notice what may be considered to be their modes of operation; and mention their doses and modes of exhibition.

The prizes were awarded as follows:—

Henry March Webb, Guy's Hospital, first prize; gold medal. R. W. Golding, Charing Cross Hospital, second prize; silver medal.

SECOND ANNUAL REPORT

OF THE

GLOUCESTERSHIRE MEDICAL AND SURGICAL ASSOCIATION.

To the Editor of the Medical Gazette.

SIR,

AT a numerous meeting of the Gloucestershire Medical and Surgical Association, held at the Bell Inn, Gloucester, on the 4th of October last, the report, of which I enclose you a copy, was adopted, and which I shall be obliged to you to publish in your journal.

I am, sir,

Your most obedient servant,

JOHN W. WILTON,
Secretary to the Association.

Gloucester, Nov. 21st, 1842.

Report.—In presenting the annual report of the proceedings of the Association, the Central Section observe, with pleasure, that the grounds of congratulation which last year existed have, in no degree, passed away; on the contrary, the spirit with which the affairs of the Association have proceeded has been productive of increased benefit, and affords a just stimulus for further exertion.

Amongst the primary objects of the Association are the public interests of the profession, and parliamentary legislation connected with it. The events of the past year leave little or no doubt that some legal measure, having an important influence on the profession, will soon be adopted; the necessity, therefore, for medical associations, to watch and protect our interests, has become more imperative on this account than at any previous period.

experienced in the best possible opportunity, which confirmed the intention and I then desisted to bring in a bill for the purpose of exposing the conduct of the medical profession, and memorialized the Secretary of the Association on the subject. The requirements of the profession were strongly but respectfully set forth. The opinion of the Association on the important subject of medical reform, and the want of efficient legal protection to its members, were fully embodied with the general matter of the memorial.

The grievances inflicted on the profession by the Poor Law Commissioners have been an unceasing object of consideration. The legislature has been petitioned, and the individual members of both Houses of Parliament connected with this county have been addressed by your Society on the subject. From some of these answers have been received, exhibiting an interest in the profession and its present affairs; and although it must be acknowledged that, on the whole, our representatives indicate a most unjust indifference to those questions relating to the medical profession, still these repeated applications must tend to awaken a more lively interest in our behalf, and produce that share of legislative consideration which has hitherto been denied us.

It is even now a matter of congratulation that the efforts made by associated bodies of medical men have been productive of very considerable success. In the report of last year sanguine hopes were expressed of a modification in the working of the Poor Law Bill: those hopes have not been disappointed: and it has been shewn that the persevering remonstrances of large and respectable bodies of men, such as constitute our medical associations, compel attention, even from the reluctant ear of political leaders and Poor Law Commissioners.

The formation, then, of medical associations, which is now taking place in all parts of the kingdom, is a circumstance which may well afford our Society the greatest satisfaction; and it is a further pleasure to observe, taking a most prominent part in their proceedings, the most distinguished men who adorn the respective branches of the profession, many of whom can have no possible self-interest in the questions they engage in, and whose only motive must be the advancement and welfare and dignity of the profession, and the benefit of the public depending on it.

Amongst the occurrences of the past year, and possessing a high interest to the Society, must be noticed the prosecution of a druggist in Cheltenham for illegally practising as an apothecary. Our Association held communications with the Apothecaries' Company on the subject, and furnished information which led to legal proceedings, and the

conviction of the offender. This important check to the encroachments on the profession is a satisfactory result of the interference and efforts of the Association, and has been extensively made known as a caution to others, and a preventive or check to the evil.

Although, by past exertion, so much has been accomplished, there must yet be no diminution of effort. The practices of the Poor Law Commissioners, as they relate to the profession, will require a constant and vigilant observance; without an effort to retain it, even that which has been conceded may be lost: but the prospect of a bill to regulate our profession, to be introduced by the government, is a most anxious and important event. There is little reason to believe that the bill will be satisfactory to the great body of medical practitioners, and, if otherwise, the only chance of preventing its objectionable provisions from becoming law will be by the early and active efforts of associated bodies like our own, and the individual efforts of our members amongst their respective parliamentary representatives.

In carrying out the objects of the Association, every attention has been paid to economy; and it is hoped that the Treasurer's statement will meet with approbation.

	£	s.	d.
The expenditure during the past two years has been	25	8	6
And the whole receipts during the same period	21	4	0

Leaving a balance due to the Treasurer of £4 4 6

To meet which, there are unpaid Subscriptions to the amount of £8. 8s.

When the small amount of the annual subscription of each member is remembered, and also that all the expenses of forming the Association are paid, this statement, with which the section conclude their report, may well be considered satisfactory.

October 4th, 1842.

BRITISH MEDICAL ASSOCIATION.

WE subjoin a communication which we have received from Mr. Leeson, in reference to a letter purporting to be from him, which was published in the *GAZETTE* of last week, but which he now informs us was not written by him. A proof had been sent to Finsbury Square; and on questioning the person who took it there, he states that Mr. Leeson, when he returned the packet, told him he was not the writer of the letter, but that whoever wrote it must have been well acquainted with his sentiments, and that he had no ob-

jection to its publication. Of this conversation, however, we never heard till after the receipt of the following letter; and we greatly regret that Mr. Leeson did not see the propriety of at once either writing to us, or stating his disavowal on the returned proof, instead of delaying to do so until after the publication of the spurious document.

— ED. GAZ.

To the Editor of the Medical Gazette.

SIR,

THERE is a letter in your journal of last week, signed "James Leeson," and dated from Finsbury Square, respecting the British Medical Association. I beg to say that I am not the author of that letter, neither have I the least knowledge of the person who is. My christian name is John, instead of James, as you will perceive by my signature. I should not have noticed the letter at all, if it were not dated from Finsbury Square; and as I am the only person there to whom it could refer, and having no desire for its paternity, I forthwith proceed to its disavowal; and I feel the more anxious to do so, because it contained expressions towards individuals which I consider to be most severe and unjustifiable.

I never attended but two of the meetings of the British Medical Association, and that was when the founder of it first advertised them, and began to beat up for recruits. The actors then were made up of a great many young men, who were hard strugglers in their professional pursuits, as a consequence of the want of that legitimate protection which they so justly require, and a small knot of outsiders, or seasoned malecontents, of the older corporations, whose only concern was how they could use the fire and enthusiasm of their young and unsuspecting colleagues as so many stepping-stones (which has been so often done before) to their cupidity and ambition. I readily saw how the thing was likely to be; that the young ones were already in the gripe of the old ones; that it would fail to do all the good which might be easily done under a better system of organization; and things being thus, I made my bow and vanished. Ever since, I have taken no interest in the affairs of the British Medical Association, and perhaps it had no great loss in my departure from it. I am convinced that, had other elements moved the operations of that body, different results would have followed; and until wealth, influence, character, and numbers, meet in combination, little good can be expected. I am satisfied that we are not such a republican body as to suppose that if the gentlemen who now call themselves our heads were to expose themselves to a popular election, that the most of them would be restored to their present position; and how much more ho-

nourable would that position be to them, than to remain, as they now are, the jealous objects of an angry profession.—I am, sir,

Your obedient servant,

JOHN LEESON.

4, Finsbury Square,
Nov. 22d, 1842.

MONOMANIA OPHTHALMICA.

By DR. WINTERNITZ.

A GENTLEMAN, forty-nine years old, was seized with gout in 1837, which he himself was inclined to attribute to cold applications made to an accidental swelling of the head. But the simultaneous appearance of an obstinate paronychia on his right middle finger, together with the decline of his strength, earthy complexion, and emaciation, left no doubt as to the constitutional nature of the affection. Late in the autumn of 1840 he made a journey to North Germany in an open carriage, by which exposure he suffered from rheumatism. The abdominal organs became disordered, and about the same time he suffered morally from anxiety. All these concurrent circumstances had the effect of developing the hypochondriac diathesis in the patient. The disease which forms the subject of this article began in July 1841. Dr. Winternitz found him in a state of the greatest uneasiness, complaining of a confusion of head. During the day, and while in the act of walking, he had frequent attacks of faintness, followed by general perspiration. He was sensible of a sudden spasmodic constriction of the right eye-ball, as if it were confined and pressed in the socket, accompanied by an actual twitching upward and downward of the upper eyelid. Objects appeared as if surrounded by a gauzy halo: the patient was unable to read, in consequence of the letters appearing to swim before him. Writing was less difficult, although he was continually apt to carry the pen beyond the paper. The eye itself, beyond a slightly diminished activity of the lachrymal gland, betrayed nothing morbid.

The author's opinion that the affection was of an hypochondriac or psychical origin was founded on the following circumstances. There were no objective symptoms; the patient's whole attention was engrossed by his disease, which he was disposed to consider by turns of a congestive, nervous, arthritico-metastatic, &c. origin; he sought eagerly the society and conversation of oculists; disconsolately anticipated the total loss of vision: the patient had, moreover, at a former period, suffered from hypochondria.

The therapeutic indication was to withdraw the patient, as it were, from himself, and to interrupt his habit of constantly thinking of his disease. This was effected

chiefly by means of a jaunt to Paris. Here the patient was advised to employ tepid camomile-flower baths, with cold water douches along the spine. Vertigo became of rarer occurrence; he gradually regained facility in reading and writing; and after three weeks' residence in Paris felt a strong desire to revisit his family, whom he reached in perfect health.—*Oesterreich. Medicinische Wochenschrift*; and *British and Foreign Review*.

NECROSIS OF THE OS CALCIS.

M. MALLESPIKE, who has examined a great many cases of necrosis of the os calcis in children, states that, although generally dependent on a constitutional cause, it remains a long while without affecting the other bones of the tarsus, and that, in general, the only operation needed is the extraction of the sequestrum, instead of the amputation of the leg. This latter operation, he says, is more frequently practised than need be, because the tumefaction of the cellular tissue, which is sometimes enormous, the situation of fistulous openings at a distance from the os calcis, and the lateral mobility of the foot (the result of the destruction of the os calcis, whereby the heel has lost all power of resistance), induce the practitioner to consider the disease more advanced and more extensive than it really is. He observes, further, that the absorption of the sequestrum takes place very rapidly, and that the new bone destined to supply the place of the diseased one is deposited in the first instance on a level with the insertion of the tendo Achillis, and at the point corresponding to the calcaneo-cuboid and astragalocalcanoid articulations. The articular cartilages are not destroyed, and generally continue intact a long while; the ligamentous apparatus is generally found friable, softened, and thickened; occasionally, appearances have presented as if nature were about to supply the place of the lost ligaments by a fresh apparatus.—*American Journal of Medical Sciences*.

ON ADULTERATIONS OF OPIUM.

AN Armenian, who arrived here from Syria some time ago, and who had directed his attention for many years to the poppy plantations, as also the methods of procuring opium, told me that the adulteration of opium most frequently met with was that effected by mixing the opium, whilst fresh and soft, with finely-bruised grapes from which the stones have been removed. He assured me that not a single mass of opium is exported from the East without having undergone this adulteration.

Another adulteration consists in bruising the exterior skin of the capsule and stalks

of the poppy, together with the white of eggs, in a stone mortar, and then adding this mixture in certain proportions to the opium.—*Annals of Chymistry and Practical Pharmacy*.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

Thursday, November 17, 1842.

Tempest Pollard, Pontefract.—A. G. Lamotte, Tiverton.—J. Hendrie, Wigton.—J. Morgan, Somerset.

A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, November 12, 1842.

Small Pox	8
Measles	24
Scarlatina	39
Whooping Cough	17
Croup	9
Thrush	6
Diarrhœa	6
Dysentery	6
Cholera	0
Influenza	2
Typhus	33
Erysipelas	10
Syphilis	1
Hydrophobia	0
Diseases of the Brain, Nerves, and Senses ..	128
Diseases of the Lungs and other Organs of Respiration	341
Diseases of the Heart and Blood-vessels ..	27
Diseases of the Stomach, Liver, and other Organs of Digestion	61
Diseases of the Kidneys, &c.....	3
Childbed	7
Ovarian Dropsy	1
Disease of Uterus, &c.	3
Rheumatism	1
Diseases of Joints, &c.	1
Ulcer	0
Fistula	0
Diseases of Skin, &c.....	1
Diseases of Uncertain Seat	97
Old Age or Natural Decay.....	78
Deaths by Violence, Privation, or Intemperance	16
Causes not specified	5

Deaths from all Causes 931

METEOROLOGICAL JOURNAL.

November.	THERMOMETER.	BAROMETER.
Wednesday 16	from 41 to 43	29.66 to 29.79
Thursday 17	34 44	30.08 30.32
Friday 18	29 42	29.43 29.36
Saturday 19	28 48	30.13 29.82
Sunday 20	42 48	29.75 29.70
Monday 21	33 44	29.71 29.76
Tuesday 22	30 35	29.41 29.25

Wind, N.E. on the 16th and 17th; N.E. and S.E. on the 18th; S. on the 19th and 20th; N. by E. and N. on the 21st, and S.E. on the 22d.

Except the evenings of the 16th, 17th, and 18th, and the morning of the 21st, generally cloudy. Rain fell on the morning of the 16th, morning and evening of the 19th, and morning of the 22d, accompanied with snow.

Rain fallen 1 inch and $\frac{31}{100}$ of an inch.

WILSON & OGILVY, 57, Skinner Street, London.

THE
LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, DECEMBER 2, 1842.

LECTURES
ON THE
THEORY AND PRACTICE OF
MIDWIFERY,

*Delivered in the Theatre of St. George's
Hospital,*

By ROBERT LEE, M.D. F.R.S.

LECTURE VIII.

On the structure and functions of the membranes of the human ovum in the early months of pregnancy.

At the end of the second month, the human ovum is about the size of a hen's egg, and is then contained entirely within the cavity of the body of the uterus. On dividing the membranes, the *amnion* will be seen forming a much larger and stronger sac than at the end of the first month after conception, but still very transparent, and without blood-vessels or regular fibres. In some ova, before the eighth week, the amnion has increased so much that it fills the greater part or the whole of the cavity of the chorion; and the cellular tissue which had been situated between it and the chorion has partially or entirely disappeared. The amnion is much larger, and contains a far greater quantity of liquor amni, at this period, in some ova than in others of the same age. The amnion and chorion always form the sheath of the umbilical cord; and the umbilical arteries and vein, and duct of the *vesicula umbilicalis*, can be seen through the amnion and chorion passing along the cellular tissue of the cord. The arteries sometimes begin at this early age to turn round the vein, and the whole cord to be twisted round near the embryo. In the third month of pregnancy the amnion and chorion are usually closely united together through their

whole extent, and continue to enlarge at the same rate till the end of the ninth month.

The *vesicula umbilicalis*, in healthy ova, is nearly of the same size at the end of the second as it is at the end of the first month; but its duct is impervious, and can seldom be traced farther than the umbilicus of the embryo. The omphalo-mesenteric vessels, which consist of an artery and vein from the superior mesenteric artery and vein, are often seen accompanying the duct, and ramifying upon the vesicle. In many ova expelled in abortion, the *vesicula umbilicalis* has lost the appearance of a pyriform sac filled with fluid, and is a small, flat, solid, opaque body, firmly adherent to the outer surface of the amnion, near the insertion of the umbilical cord into the membranes. It is sometimes seen in this condition on the fetal surface of the placenta, after its expulsion in labour at the full period.

The membrane of the chorion is at this time uniformly thicker and stronger than the amnion, and no blood-vessels have ever been observed ramifying in it. Its inner surface is smooth, but the whole of its outer surface is covered with villi, which grow from it by slender roots, and spread out like the branches of a tree under the decidua, in which they are firmly imbedded. The villi are most luxuriant on that side of the chorion where the placenta exists, but they are always present also on the opposite side of the chorion, and are joined together at their extremities, so as to form a great reticular or cellular structure between the decidua and membrane of the chorion. The villi often terminate in irregular-shaped bulbous enlargements, and from their sides slender filaments pass off, to connect them together. The villi of the chorion do not run in pairs like blood-vessels, and no anatomist has ever succeeded in injecting them. They are not blood-vessels, though often called the shaggy vessels of the chorion.

Seen through a powerful microscope, they resemble nothing so much as a mass of small, smooth, convoluted foetal intestines; but they do not appear to be hollow. From the sides of the villi others arise by slender roots, which often suddenly enlarge, and terminate in blunt rounded extremities. Between the roots and branches of the villi there are large cells or spaces formed, which all freely communicate together, and also with the cells or interstices of the placenta, which at this period do not essentially differ from the cells of the chorion, and are always, in ova expelled in abortion, distended with fluid or coagulated maternal blood. If a blow-pipe be introduced into the cells of the chorion or placenta, the air passes all round the ovum, and fills these cells completely. Injections thrown into the cells of the chorion or placenta, if they do not contain much coagulated blood, likewise fill the whole of the space between the decidua and outer surface of the chorion. That it is maternal blood which fills the cells of the chorion and placenta in aborted ova, is evident from this fact, that where the embryo is not developed, I have repeatedly seen these cells full of blood. There is no specimen of the human ovum now before you, in which there is not more or less maternal blood seen coagulated in the cells of the chorion and placenta; and it is impossible the blood could have been forced into these by any artificial means. This blood, it will soon be seen, can only enter the cells of the placenta and chorion through the small tortuous arteries which are always observed in that portion of the decidua which covers the uterine surface of the placenta.

FIG. 1.

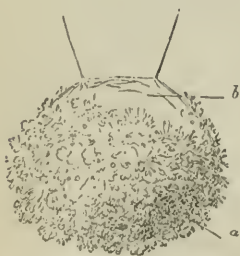


FIG. 1 represents, though very imperfectly, the appearances presented by the villi of the chorion at the end of the second month. *a* shews the situation of the placenta; *b* is the part which lay under the decidua reflexa, where the villi are beginning to disappear.

FIG. 2—*a* and *c*, the chorion where the villi have disappeared; *b*, the situation of the placenta, where the villi of the chorion have continued to grow.

FIG. 2.

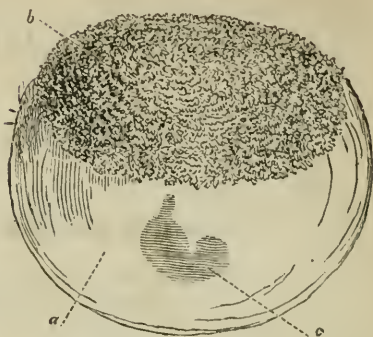


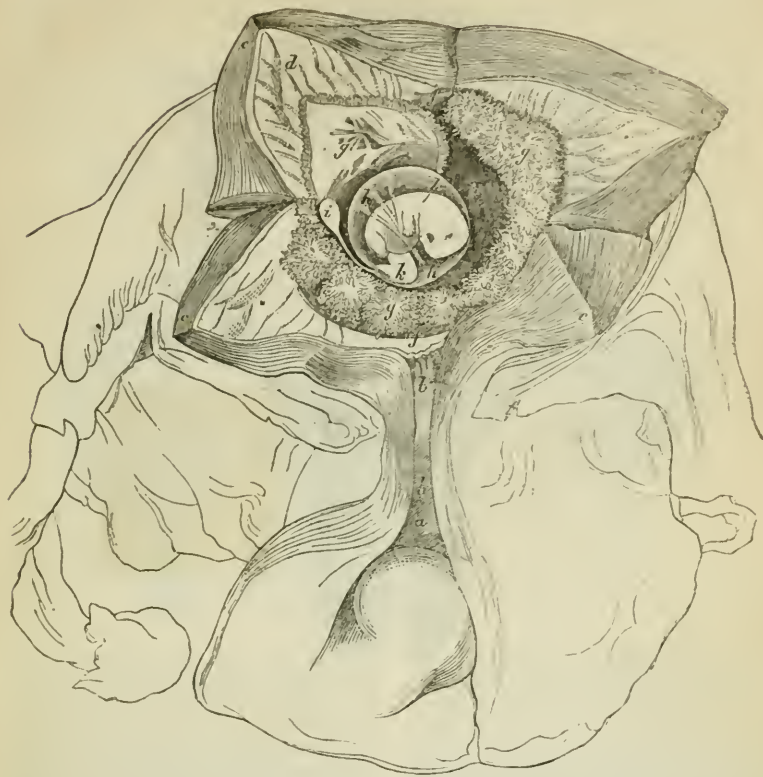
FIG. 3.



FIG. 3.—Diagram representing one of the villi of the chorion arising by a single root.

At the end of the second month of pregnancy, the structure of the placenta is essentially the same as at the full period. It consists entirely of the ramifications of the two umbilical arteries and vein, covered on the uterine side by the decidua, and on the foetal surface by the amnion and chorion. But all the branches of the vessels of the umbilical cord in the placenta have an additional coat from the villi of the chorion. In what manner the umbilical vessels pass into the villi of the chorion to become invested with a layer of chorion it is impossible to explain, unless it be admitted that they are developed contemporaneously. Between the foetal vessels covered with chorion there are cells or interstices, precisely similar to those which are seen on the opposite side of the chorion, where the villi also form a great chain, or series of cells, which all freely communicate with those of the placenta. There being no septum between the cells of those villi of the chorion which form the placenta, and those which are destined to disappear in the fourth month on the other side of the ovum, if maternal blood enters the cells of the placenta it must fill all the cells of the chorion; and thus not only the villi of the placenta, but all the villi of the chorion, must be in contact with, or bathed in, the maternal blood.

Diagram from Wagner, representing the uterus with its contents in the seventh week of pregnancy.



The embryo, perfectly normal in its conformation, is enclosed in its amnion. Betwixt the amnion and chorion the umbilical vesicle is seen. The uterus, lined with the decidua, is laid open, and its parietes reflected so as to shew its contents. *a*, The os externum; *b b*, cervix uteri; *c c c c*, the uterus laid open by a crucial incision, and reflected in four flaps; *d d d*, decidua vera spread over the uterine surface; *g*, flocculi or villi of the chorion; *g 2*, internal aspect of the chorion; *h*, amnion; *i*, umbilical vesicle; *k*, umbilical cord; *l*, embryo; *a*, space for the tunica media, as it is termed, between the amnion and chorion. The embryo is depicted of its natural size, but the other parts represented are only two-thirds the size of nature.

The decidua is the outer membrane of the ovum, and covers it as completely as the shell does the hen's egg. That portion of it which covers the placenta is called the placental decidua. At the margin of the placenta this membrane separates into two distinct layers, which extend over the whole of that part of the ovum which is not covered by the placental decidua. The outer of these layers of decidua is called the decidua vera, or uterine decidua, the inner layer the decidua reflexa, and between these there is always a large cavity formed called the decidual cavity. At the edge or circumference of the placenta, the placental decidua

always divides into two distinct membranes, between which there is a large smooth cavity, the outer wall of which is formed by the uterine decidua, and the inner wall by the decidua reflexa. The outer surface of the uterine decidua adheres to the inner surface of the uterus, but the inner surface of the uterine decidua is smooth and free, like the pleura costalis. The outer surface of the decidua reflexa is also smooth and free, like the pleura pulmonalis, but its inner surface firmly adheres to the extremities of the villi of the chorion, as the pleura pulmonalis does to the substance of the lungs.

The outer membrane of the human ovum,

Sectional plan of the gravid uterus, from Wagner, in the third and fourth month.



b, the decidua vera; *c*₂, the decidua vera passing into the right fallopian tube: the cavity of the uterus is almost completely occupied by the ovum. *e*, *e*, points of the reflection of the decidua reflexa; in nature the united decidua: do not stop here, but pass over the whole uterine sur-

face of the placenta; *g*, supposed allantois; *h*, umbilical vesicle; *i*, annion; *k*, Chorion covered with the decidua reflexa; *d*, cavity of the decidua; *f*, decidua serotina, or placental decidua.

now called *membrana decidua*, was first accurately delineated by Dr. William Hunter in 1774. The different portions of this membrane, and the relations they bear to the uterus, placenta, and chorion, have been most faithfully represented in eleven figures contained in the two last plates of his *Anatomy of the Human Gravid Uterus*. In one of the references to these figures it is stated, that the decidua reflexa forms an external covering to that part of the chorion which is not in contact with the inner surface of the uterus, and which is turned over the chorion much in the same manner as the inner lamella of the pericardium is reflected to cover the outer surface of the heart. In Dr. Hunter's *Anatomical Description of the Human Gravid Uterus and its Contents*, published in 1794, the decidua, in the early months of pregnancy, is described as a soft,

tender, pulpy, vascular membrane, which lines the whole cavity of the fundus uteri, reaching to the beginning of the cervix, and passing a little way within the origin of the fallopian tubes. The inner surface of this membrane is smooth, but the outer surface has a prodigious number of little processes, or flocculi, shooting from it, which give it a very irregular appearance. Dr. Hunter describes the decidua reflexa as a membrane of considerable thickness, and of a yellow colour than the uterine decidua, or decidua vera. The ovum, he says, lies between a part of the decidua vera and the decidua reflexa, both of which unite into one membrane at the edge of the placenta, or the decidua vera divides at the edge of the placenta into two laminae, one of which passes between the placenta and inner surface of the uterus, and the other forms the decidua

reflexa which covers the outer surface of the chorion. Where the decidua reflexa is beginning to pass over the chorion, there is, at an early period of pregnancy, an angle formed between it and the decidua which lines the uterus; and here the decidua is often extremely thin, and perforated with small openings, so as to look like a piece of

lace. Though the decidua be allowed to be the outer membrane of the secundines, Dr. Hunter observes, yet, as it is really the internal lamella of the uterus, we may still retain the old language, and say that the outer membrane of the ovum is chorion, and that the chorion is in contact with and adheres to the uterus.

Diagrams from Dr. Hunter, to illustrate the membranes of the ovum.

FIG. 1.

FIG. 2.

FIG. 3.

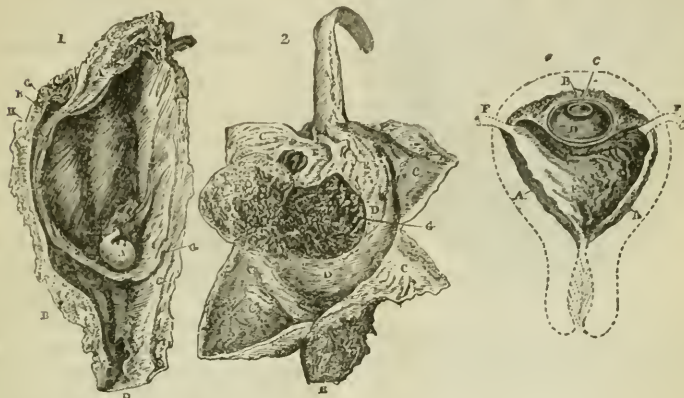


Fig. 1, a vertical section of an ovum of about nine weeks. A A, the section of the placenta which is supposed to adhere to the upper and back part of the uterus; B B, the section of the anterior portion of the decidua; C C, the section of the posterior portion of the decidua; D, the termination of the decidua at the cervix uteri; E E, the cavity of the amnion, in which the embryo hangs by a slender navel-string, from the inside of the placenta; F, the section of the three membranes, which are not only contiguous, but adhere to one another, viz. the amnion, the chorion, and the decidua reflexa; G G, the angle at the edge of the placenta where the inner layer of the decidua is reflected over the outside of the chorion; H, here those three membranes are a little separated, to shew their course at the placenta.

Fig. 2, an aborted ovum about eight weeks. A small strap of the decidua has been cut out, and turned up, and the decidua opened by a crucial incision, and the four angles reflected, and then a round piece of the decidua reflexa dissected off, and turned to one side, to shew the villi of the chorion.

Dr. Hunter has said nothing respecting the physiology of the decidua reflexa and uterine decidua, or of the great cavity formed between them; and he has not endeavoured to explain why these structures should exist only in the human ovum during the early months of pregnancy. Though many distinguished anatomists have examined and described the different portions of the deciduous membranes during the last sixty-seven years, no important addition has been

A, the cut slip of decidua turned up; B, the part of the ovum where Dr. Hunter supposes there is no decidua, viz. opposite to the passage of the cervix uteri; C C C, the inside of the four angles or flaps into which the uterine decidua was reduced by a crucial incision; D D, the decidua reflexa covering the villi and cells of the chorion; E E, the angles at the edge of the placenta, where the uterine lamella of the decidua is continued over the outside of the chorion, forming the decidua reflexa; F, a round portion of the decidua reflexa dissected from the outside of the chorion, and turned aside; G, "the chorion with its shaggy vessels laid bare. These vessels adhered firmly to the decidua reflexa, and parts of them were cut off with that membrane."

Fig. 3. A diagram, not from nature, of an early ovum in the uterus. A A, uterine decidua; B, placental decidua; C, the cavity of the amnion; D, the cavity or space between the amnion and chorion; E, the cavity of the decidua; F F, the tubes open upon the inside of the decidua. The cervix uteri contained no part of the ovum.

made to Dr. Hunter's description of them; and the greatest discordance of opinion still prevails respecting their structure, functions, and mode of formation. Some have denied altogether the existence of the placental decidua and the decidua reflexa, and others the vascularity, and even the organization, of the uterine decidua. It is still the opinion of some anatomists, however destitute of truth, that the decidua is merely the altered mucous membrane of the uterus.

Fig. 1.



Fig. 1 represents an aborted ovum of five weeks described and figured by Wagner. The various parts of an ovum at this period are well seen, and all in their natural state, except the decidua reflexa.

FIG. 2.



Fig. 2 represents the same ovum in outline; *a*, indicates the decidua uteri reflected at *b*, into the decidua reflexa *c*, which is thickened by the infiltration of blood; *d*, the villa of the chorion; *e*, the amnion laid open; *f*, the reticular tissue of the amnion; *g*, the umbilical vesicle.

In the next lecture I shall state certain facts which seem to prove that the circulation of the maternal blood in the human ovum during the early months is entirely carried on by the different layers of the decidua, and by the cells of the placenta and chorion.

LUMLEIAN LECTURES,

Delivered at the Royal College of Physicians in London, 1842,

By T. MAYO, M.D. F.R.S

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LECTURE III.

On Hysteria.

The disease, properly so called, often confounded with hysterical diathesis: mischievous results of this. Illustrative cases. Criteria considered through which this confusion may be avoided. Illustrative cases.

THE line which separates apoplexy arising from vascular action from apoplexy depending on other influences, is analogous to that which is carried out with various degrees of precision, in various instances, between hysteria and inflammatory affections, or, generally, those affections which require depletory measures. I shall endeavour to point out some of the difficulties which attend upon diagnosis in these cases; then to suggest means for the removal of those difficulties.

It is very probable that the basis of vascular excitement is often laid in affections of the nervous system, however much this vascular excitement may react, and become itself a source of nervous affection. That there is a state of the nervous system in which vascular excitement is easily set up, and, it may be presumed, easily pacified, we have reason to believe, from its leading to no appreciable changes of structure in such cases. This holds good with what is called nervous disease generally; and it is extensively true with regard to phenomena occurring under the hysterical constitution.

But there is a specific disease recognized by nosologists, and pursuing a definite course, generally springing out of the hysterical constitution, but apparently capable, under strong exciting causes, of occurring without such predisposition. This is hysteria: and to all the phenomena of this disease, the remarks above made, as to the appropriateness of a treatment into which depletory measures must be admitted sparingly, if at all—to all phenomena, I say, of hysteria, these remarks are applicable.

But when the theory here suggested, so applicable to hysteria, is extended to the hysterical constitution, it is not equally safe, or productive of just views. Many symp-

toms, or groups of symptoms, arise and run their course in a hysterically disposed person, which certainly take some tinge, or colour, or shape, from the constitution of the patient, as every disease varies according to idiosyncrasy, but which are not without mischievous practical results treated as, or confounded with, the hysterical disease. This latter state has a treatment of its own, to which we have above adverted, specifically different from that of other diseases. But symptoms, or trains of symptoms, may spring up in a hysterical constitution belonging to nosological heads entirely distinct from hysteria: and these symptoms will demand that the general principles of treatment applicable to their proper nosological placing should be carried out: and this demand will not safely be superseded, though it may be modified in its stringency, by the hysterical character of the constitution in which we presume these symptoms to be occurring.

The following cases may at once illustrate this view, and prove its importance, or, at all events, its right to be considered.

When I first saw the young lady who is the subject of the present case, and who was a florid, well-grown person, aged 20, of the mixed nervous and sanguine temperament, she had, for some days, laboured under cerebral symptoms. Since the abridgment of her last period, in the preceding week, there had been increasing upon her acute pain in the head, on which delirium rapidly supervened, with daily rigors, and extreme intolerance of sight. This was her state when I saw her. She had been freely purged in the last three days; nothing further had been done. Her complaints of pain in the head were incessant at that time. I directed that her head should be cropped close—the hair being luxuriant,—evaporating lotions applied constantly, and three grains of calomel given every fourth hour. In forty-eight hours the evacuations had become green. No increase of symptoms had taken place, but no abatement of them, and her strength had fallen much.

Having observed some periodicity in her symptoms, and some other evidences of nervous affection, and trusting that the calomel had placed her in a state of safety in respect to the inflammatory or congestive part of the case, I now gave her sulph. quinæ, gr. ij. 4tis. for about six doses. On this her strength increased, and the shiverings ceased: the mind also became clear. And now set in a series of hysterical symptoms. Hiccup first took place, with severe spasms; soon opisthotonos and prosthotonos. These symptoms obtained relief from free doses of laudanum. On one of these, however, extreme depression of pulse ensued; and then a sudden and total inability to swallow took place,

with a marked sense of constriction in the larynx.

For a fortnight the obstinacy of this spasm was unabated, and no food or liquid was swallowed. Her mind meanwhile had become perfectly clear, and the most anxious efforts were made by her to overcome the difficulty. During another fortnight small quantities of ice, or vinegar and water, were occasionally taken. At the end of that time we succeeded in conquering the spasm by means of a tube attached to a common syringe with a curved extremity, the curve of which was carried behind the molar teeth, over the dorsum of the tongue, across the posterior fauces. It is to be observed, that she gave us the most ready and complete assistance towards the completion of this measure. Her will was certainly used in concurrence with us; but, unassisted by the instrument, it was powerless to help her. During this time the mind indeed was perfectly clear. Daily nutritive enemata were given, and much appeared to be retained. Broth was now freely injected into her stomach: the moment after a full expiration being always seized for this purpose. Once only she opposed this measure, her expression of countenance being at the same time wild and unreasonable. I then resorted to cold affusion: first dashing water into her face, then pouring it on her head. This instantly quieted, soothed, and pleased her; and she instantly took the food, though not with less difficulty than before. Meanwhile aperient enemata kept the bowels open; and the bladder never acting of itself, the catheter was used every twelfth hour. On this point, by the way, I must venture to appeal to a case published by Sir B. Brodie, in his work on Hysteria, against the strong disapprobation expressed by him in that work of the use of the catheter in hysteria.

"In a patient," he observes (p. 67), "who had long laboured under hysterical retention of urine, the bladder was found enormously distended, of a black colour, the mucous membrane being at the same time much attenuated."

My patient now improved, and convalesced very gradually. Since the head symptoms gave way she had constantly complained of much tenderness of abdomen. This continued long, and gradually left her; the only remedies used in relation to it being asafoetida and mildly aperient enemata. The symptom so frequent in hysteria shewed itself largely—that of immense faecal evacuations coming away as the spasmodic symptoms yielded. When waywardness occasionally shewed itself, provided there was sufficient heat of skin, we repeated the cold affusion. The whole attack finally subsided, but she long continued in a very weak state.

The above case was considered by myself

and Mr. Newington, who attended with me, as, at the commencement, meningitis. But we took into consideration the nervous diathesis of the patient, and trusted to active aperients, calomel, cold lotions, and a darkened room. When the fecal evacuations shewed that the calomel had affected the system, and nervous symptoms became prominent, we resorted partially to quinine, principally to antispasmodics and sedatives, assisted by enemas, cold affusion, and Mr. Newington's ingenious instrument for the introduction of food.

Had the above long train of symptoms been conducted on a view of the case which, recognizing the hysterical diathesis of the patient, would have anticipated the outbreak of hysteria itself, and treated the initiatory head symptoms as a part of an hysterical disease—that is, had antispasmodics and sedatives or tonics been instantly resorted to—how would this case have proceeded?

This question may, perhaps, be answered satisfactorily through another case, which I will proceed to communicate.

In the spring of 1840 I was consulted respecting a young lady, aged 15, whose previous symptoms, as detailed by her mother, and confirmed on other authority, are indeed calculated to illustrate this subject. She had grown rapidly, was of the nervous temperament, and predisposed to hysteria. At the commencement of June 1839, she is described by her mother as attacked by head symptoms, which an eminent practitioner at Leamington regarded as hysterical, and treated with a succession of remedies (excluding depletion) relatively to this view. This treatment was continued from the 14th to the 23d of June most unsuccessfully; and it would appear that the physician desponded as to the event. At this point of time the case was transferred to Mr. Prichard, of Leamington. Such was Mrs. M.'s statement to me.

Curious respecting this subject, which recalled to my mind the case last detailed, and some others which I had seen, I consulted the *MEDICAL GAZETTE*, where I was told I should find a communication from that gentleman. This letter from Mr. Prichard carries with it so much material for thought, in the distinction to be observed between hysteria and inflammatory action modified by the hysterical diathesis, that I will give it you in full, or nearly so. It is in fact scarcely susceptible of compression.

"The young lady," Mr. Prichard observes, "had complained on Friday, the 14th, of languor and debility, with slight headache. On Sunday these symptoms had assumed an important character: vomiting had occurred; pallor had given place to a flushed countenance: then came imperfect vision, squinting, convulsions. I will not advert to the treat-

ment adopted before I took charge of the case, further than to say that depletion had not been considered expedient, but I will describe the state of the patient at that time, Sunday the 23d. She was tossing her arms and body convulsively about the bed; her moans at the same time expressing severe pain. Her countenance death-like, cold and pale, except one flushed spot on the left cheek; a dark livid appearance, surrounded the eyes, which were open, fixed, and filmy, the sclerotic discovering a number of injected vessels. The pupils contracted, and insensible to light; the tongue protruded from the mouth, and firmly held by the teeth closed upon it; the extremities cold; the hands of a livid blue; no pulse perceptible at either wrist, but the carotids gave a thrilling frequent beat, and the head was extremely hot."

The practice adopted by Mr. Prichard, without giving any hopes of success, was the removal of a profusion of hair, and the use of cold lotions, with a view, he says, of mitigating the convulsive movements. The relief, he says, thus obtained was so great that he proceeded to further remedies. Thirty leeches were applied to the front and top of the head, which bled freely. In the evening, finding the extremities less cold, and the countenance less expressive of suffering, he applied more leeches to the temples. He was now enabled to get a little calomel into the mouth, which was swallowed; the jaw relaxed its hold on the tongue, and during the night the juice of some strawberries was swallowed with avidity. The tongue was moist and loaded; some sleep was obtained for a few minutes at a time. Subsultus, however, of the muscles of the arms was very observable.

Monday, 24th.—Bowels had acted freely, but involuntarily, as also the bladder; pulse perceptible, as a fine thread, at the wrist. Juice of strawberries was continued. Calomel, 6tis horis.

Tuesday.—After a better night, more consciousness; eyes still fixed and glassy, pupils contracted. She expressed in a low whisper she had pain in the forehead. Hirud. viij. temporibus; emp. lyttæ nuchæ; calomel, 6tis.

In this state, or one little varying, she continued till Friday the 28th; then a change took place for the worse. Extreme subsultus in arms and legs; pulse almost imperceptible, from 130 to 160; countenance expressive of great pain and suffering. In the evening violent convulsions, which continued with increasing force and decreasing intervals, exceeding in volume, but resembling in kind, the paroxysms of hydrophobia, with violent ejection of saliva.

The patient was conscious of, and violently frightened at, the approach of each spasm. The pupils were now dilated, and partially

sensible to light. The bowels and bladder acted involuntarily under the spasms.

Acting upon his hypothesis that the case was meningitis, and reasoning from the relief which had followed depletion a few days before, Mr. Prichard took four ounces of blood in a full stream. The artery soon afterwards bursting out afresh, eight ounces more were lost. The paroxysms then diminished in force, and soon entirely subsided. Some slight progress was daily made until the 9th of July, in the night of which the paroxysms returned with much force, accompanied by screaming. The bowels having been rather torpid, a dose of castor oil was given, and the attacks again disappeared on the relief produced by its operation. From this time the progress of the patient to recovery was uninterrupted by relapse. The sight being gradually restored, the eyes became acutely sensible to light. Food was taken, though with difficulty, owing to an aphthous state of the mouth. The bowels acted freely, and entire power over their action, as well as that of the bladder, was gradually resumed. Leeches were still occasionally applied, and the head wetted, from time to time, with a spirit lotion. In the course of the treatment, mercurial ointment, Mr. Prichard adds, had been rubbed into the head.

This case is termed by Mr. Prichard *meningitis*, and that it required treatment appropriate to that title, as conducted by him, is very evident; yet it exhibits many evidences of hysterical *diathesis*; and thence it happened, I presume, that the gentleman who had charge of the case before Mr. Prichard treated it as *hysteria*—a disorder for the management of which he enjoys high reputation.

The following case has for some years circulated through medical hands in London and Leamington, and many other places. It may at least “point a moral” and illustrate a principle, though far from satisfactory in regard to beneficial results to the patient herself.

By the age of 50, the lady who is the subject of this case had, in a remarkable degree, exhausted the energies of a very excitable constitution. She had been twice married. Her first marriage, during the brief continuance of it, had been one of pain and grief to her. Her mind and her body were worn by unavailing exertions and sympathies in watching over a sick husband. A state of leucorrhœa then commenced, which was aggravated by mismanagement of herself. In order to supply a new stimulus and object, and on a false conception of healthiness, she devoted herself to excessive bodily exercise, and under this came on severe pain in the loins and increase of leucorrhœa. Meanwhile, the insatiable curiosity of an

over-active and volatile mind was a continued drain upon nervous energy. Opulence gave her the fullest means of gratifying it; and finally the acquisition of rank, to which she was not born, had its vertiginous effect. She was withal a hearty eater, and full liver, though spare in person. Under these circumstances, it might be expected that the hysterical diathesis, if its elements existed in her constitution, should largely develop itself. We might expect attacks of hysterical flatulence, occasional and unexplained losses of nervous power, or intense excitement and exaggerated sensation; we might expect, also, irregular cardiac action, unsteady appetites and inclinations, and incessant changes of plans and physicians; and all this took place. But there were other symptoms which had been gradually advancing upon this lady. These were, spasmodic movements, with numbness and loss of power in the hand and right lower extremities; the first making writing difficult, the second preventing her from walking without assistance, and occasioning her to drag her leg; and there was tightness as of a cord drawn round the abdomen: and it is to be observed, that the more important of these symptoms were not transitory and fugitive, but permanent. I had, for some time, been attending this lady, and had materially benefited her in relation to some symptoms of dyspepsia. The intense pain of the spine, which she experienced at a fixed point about two hours after taking food, was relieved by dietetic expedients, *i. e.* by occasioning her to exchange solid animal food and green vegetables for softening and farinaceous food, and by mild aperients substituted for drastic doses. But now a consultation occurred between Sir Astley Cooper, Mr. Hale Thompson, and myself. Tenderness was found on gentle percussion being made on the spinous processes of some dorsal vertebrae, which tenderness had escaped attention on an examination made by former surgeons; and recumbency, with the application of moxas, was recommended. The advantage gained on this plan at first, in its subduing pain and obviating flatulent indigestion, was very great. But the stimulus of novelty, and the pleasure which a *bearable* degree even of pain gave to one whose love of excitement and novelty was immoderate, soon wore off. The patient became tired, restless, careless in her diet, and generally unobservant of rules: indeed, the facility of digestion which the counter-irritants gave her enabled her to transgress dietetic rules with less immediately inconvenient consequences. Of course the plan failed, spoilt by the patient.

About a year after this period I inquired of an eminent physician then attending this lady how she was, and found that the view of her case, which assumed the existence of

an inflammatory spinal affection, independent of hysteria, had been given up entirely, and that her case was considered as falling under the head of that class of disorders for which the term hysterical spine has occasionally been used. Discomfort was mitigated, as it had been before, by attention to the digestive organs; frequent change of place relieved and interested her mind, and withdrew her attention from her grievances; but the paralysis remained the same and unchanged. Indeed, I have competent grounds for asserting that this class of symptoms has increased*. Now I do not undertake the defence or assertion of the practice which we adopted for the relief of the presumed inflammatory spinal symptoms; neither do I, at present, vindicate the diagnosis of Sir A. Cooper, Mr. Hale Thompson, and myself, which resolved them into meningeal inflammation and subsequent effusion into the theca vertebralis; but I feel justified in asserting that those definitions, on the right observance of which mutual understanding, correctness, and consistency of practice, must depend, are mischievously relaxed when the above phenomena of paralysis are viewed as phenomena of hysteria.

Similar doubts may, I apprehend, be entertained as to the designation of the following case, classed by Sir Benjamin Brodie under the head of "various forms of local hysterical affections." "I was consulted," he observes, "concerning a young lady who complained of severe pain, and morbid tenderness of the knee, in the first instance, attended by no perceptible enlargement of the joint. The remedies which, with such knowledge as I then possessed, I was led to recommend, gave her no relief, and after some time a slight degree of tumefaction took place, depending, as it seemed, either on a fulness of the small vessels, or an effusion of lymph or serum into the subcutaneous cellular texture. She had been in this state for a considerable time, when she was seized with a succession of violent paroxysms of hysteria, which terminated in a state of hysterical affection of the brain, in which she lay in a state approaching to coma, with dilated pupils. She was now attended by the late Dr. Babington and myself. I do not undertake to say whether the disease yielded to the remedies employed, or reached its natural termination; but from one or other of these causes the patient recovered, and from that time she never complained of her knee."

Now the evidence of this having been a local hysterical affection is surely defective. It is so because she was afterwards attacked

by a succession of paroxysms terminating in an hysterical affection of the brain, in which she lay comatose and with dilated pupils. But violent paroxysms, terminating in coma and dilated pupils, themselves require the evidence of coexisting hysterical symptoms, to entitle them to the character of hysteria; unless, indeed, they have yielded to a treatment decidedly antispasmodic; and in this instance the treatment of the cerebral affection is not communicated to us.

I am disposed to think that more valuable practical results are likely to be gained from an hypothesis of paralysis simulating hysteria, than from the reverse hypothesis. Cases of both kinds occur in the valuable "Posthumous Medical Writings of Dr. Parry;" and Dr. Billing has recorded a case in which globus hystericus, with palpitation, ensued in a young man upon a violent strain of the spine, resulting from a fall under a heavy weight.

The tendency to simulate disease, which we are apt to attribute to hysteria, is, in fact, resolvable into our own deficiencies of diagnosis in the existing state of medical science. The same spirit which suggests this view is seen in the tendency to impute a kind of unreality to other phenomena of hysteria. It is an admitted fact that hysteria contains in its list of symptoms a disorder of the faculty of imagination; and thence has ensued the *non sequitur*, that hysterical phenomena are *imaginary*.

But with the fullest admission of the difficulties of diagnosis in hysteria, and which have sometimes been underrated, I cannot agree with a very able writer who has treated this subject—I mean Mr. Goodlad—in his unqualified strictures on the use of the term to explain certain morbid actions. "That which, in its own nature, is *not* permanent," he says, "cannot explain states of action which *are* permanent." Now when the eminent writer whom Mr. Goodlad criticises in these terms, admits the phenomena of hysteria to be fugitive, he is speaking not of the reality of the fact, which we have not yet reached, but of its manifestations to our senses and observation. It is not hysteria which is fugitive, but the hitherto ascertained phenomena of that disease, or of the constitution in which it develops itself, which are so: and we have no right to reject a term expressive of practical distinctions, so far as they go, because they fail to clear up the whole subject. At the same time, it must be confessed that this subject is at present in a state of unwarrantable vagueness; and it is desirable that we should endeavour to arrive at a better understanding as to what we mean when we employ the word hysteria.

Cullen's definition of hysteria, which, as such, has not been improved upon by any nosologist, is as follows:—"Ventricis mur-

* These symptoms terminated in death some months ago.

mure, sensus globi in abdomine se volentis ad ventriculum et fauces ascendentis, ibique stragulantis; sopor, convulsiones, urinae limpidae copa profusa, animus nec sponte, varius et mutabilis." So much for definition. The best description by far is that of Sydenham's "*Dissertatio Epistolaris*." Beside the above symptoms, he gives a graphical account of the *clavus hystericus*; the pains of the back; the swelling of legs distinguished from oedema; the alternate crying and laughing; the palpitation of heart: and he assigns to the diathesis of hysteria the sudden death sometimes occurring after parturition.

The diathesis or constitution of hysteria, indeed, is best described as a tendency to take on and exhibit, under exciting causes, the above symptoms. But if we would render the above-noticed definition and description available towards a sound therapeutical purpose, as an account of the disease, we must remember that those symptoms, many of which, under other circumstances, characterise other maladies, are diagnostic of the disease hysteria only in their collective state. Nor can any expedient enable us to test the quality of individual symptoms (with, perhaps, a very few exceptions) except the ascertained coexistence, or the absence, of such other symptoms as make up with it the hysterical group; unless, indeed, we adopt the method of trying it by treatment upon the one hypothesis or the other.

The following case is an instance of the solution of this question, obtained principally in the first of these ways, though certainly with a very limited induction of such concurrent symptoms.

Mrs. Jones, a lady, æt. 35, of a highly nervous temperament and full person, much exhausted by exertions in the management of a large family, had been confined three weeks, when she was attacked by dyspnœa, pain down the right side of the thorax, and an acute pain on the right side of the face, with pyrexia. The breathing was much quickened; the vesicular murmur complete, but somewhat too strong on the right side; the pulse was sharp, quick, and excited, but not hard. She had nursed her infant. Cupping on that side had been twice performed, when I saw her, with temporary relief of the dyspnœa and pain in the thorax, but a subsequent return of these symptoms. On careful inquiry I found that the symptoms observed periodical accessions. By this circumstance, by the neuralgic character of the facial pain, and, I should add, by the small effect produced by depletion, I was determined to regard the thoracic phenomena as nervous. I selected the liquor arsenicalis as the most appropriate remedy, on this hypothesis,

being less likely to increase heat of skin and action of pulse than cinchona. Five minims of it in camphor mixture were ordered every sixth hour, with requisite attention to the state of the bowels, which had been previously well managed. Upon this plan, within three days, all the above symptoms were entirely relieved.

The necessity that symptoms should be thus tested before they are assigned to the province of hysteria, must remain in force until morbid anatomy shall have explored the organic laws of this disease, or observation enabled us to describe its specific phenomena.

Indeed, until these scientific processes shall have been carried further, we must continue unable even to realise any general model or diagram of the disease. We can possess ourselves of a conception of it for practical purposes only by bearing in mind cases representing it in its most frequent forms.

It may indeed be questioned whether this method of describing or tracing out disease has not been departed from at a too early period in the history of many other diseases. Certainly, it is very often carried unconsciously into effect, by those who imagine themselves to be generalising, while they are actually practising off a single case, and that, perhaps, the last case possessing any common points, that they have witnessed. In fact, the truthfulness which a case possesses recommends it in preference to a generalisation from an analysis of cases. A picture is more agreeable than a diagram. The method however which receives an interest from this latter circumstance, sometimes even where it is not applicable, affords our only justifiable mode of applying our experience, when the limited extent of our acquaintance with the laws of the subject renders an attempt at generalisation hazardous. We are under these circumstances prudent, and not unphilosophical, in taking single cases as representing heads of disease. In this way, then, we should at present endeavour to make ourselves acquainted with hysteria.

Conformably with this view I shall proceed to lay before you four instances of hysteria; by which word, when used alone, I always mean to express the disease, not the diathesis.

I do not consider this division as exhaustive. But I believe these forms to be the most common; and I presume that a suspected symptom might be authenticated, as indicating the presence of the disease, and requiring conformable treatment, or might be disproved as much, according as it is found in combination with the rest of the group.

The first may be termed simple hysteria.

The second is simple hysteria in a more intense form ; in this case, indeed, terminating fatally. The third, hysteria with comatose or lethargic symptoms. The fourth, epileptic hysteria.

First form.—A young lady, of a mixed sanguine and nervous temperament, had enjoyed good health to her 18th year ; her only illness having been a variola, at her 8th year. Playing at ball with some companions, she is seized with giddiness and nausea. Soon after spasmodic movements take place, with no obvious reason ; they return the next and following day ; two months then elapse without further symptoms ; about the end of that time she becomes moody, disposed to solitude, and taciturn ; she now complains of a trembling sensation in the hypogastric region. Presently a lump or ball appears to be rising from that region, and mounting to the larynx, when she has a very disagreeable sense of constriction ; soon afterwards general convulsions, with loud screams, and unmeaning bursts of laughter and tears, and every sort of contortion. A sense of compression also about the hypochondriac region, and a fixed pain at the occiput. She requires to be held with great force to prevent her hurting herself or others. Each paroxysm lasts four or five hours, and suddenly terminates in a copious evacuation of limpid urine.

Simple hysteria running a fatal course.—A young person of general good health is attacked with convulsions in her eighth year, which are not repeated until the period at which the attack to be described commences. She is now aged fifteen years, and has menstruated eight months. The period is then arrested by a fright. The next period is incomplete, and she feels, under its imperfect occurrence, general uneasiness ; a sense of weight in her arms and legs, and anxious apprehensions respecting some duties which she supposes herself to neglect. The next day a sense of strangulation at the larynx and inflation of the abdomen, with convulsive movements of the trunk and limbs. The strangulation prevents her taking the smallest quantity of fluid. A large and limpid flow of urine recurs.

On the third day she is conveyed to hospital. The sense of suffocation increases and she utters loud screams, expressing apprehension that she will soon be unable to breathe ; the abdominal muscles acting with great force. Meanwhile the pulse at the wrist is contracted, hard, frequent, and irregular. The impulse of the heart considerable ; the skin red, and covered with perspiration. In six hours this patient is no more. It is stated by M. Louvet Villermey, from whom I obtain this case, that during these three days nothing whatever of a thera-

peutical kind had been done for this unfortunate person. She was examined.

The stomach was entirely empty, and contracted. The left cavities of the heart empty ; an enormous quantity of black blood in the right ventricle, and yet more in the auricle, much coagulated. The pulmonary artery and the venous system generally filled with black blood. No other abnormal point in the brain than venous congestion.

This case derives an additional interest from the uninterrupted and unmitigated course which its symptoms were unfortunately permitted to take.

Hysteria, with comatose or lethargic symptoms.—A young person, æt. 21, of sound constitution, and regular in regard to catamenia, was crossed by her parents in an attachment which she had formed. Irregularity occurs, spasmodic movements, a sense of suffocation, and the clavus and globus hystericus, with a creeping feel referred to the hypogastric region. Shortly afterwards, a letter from her lover being refused her, she is attacked more violently than before, and she then goes into a state nearly amounting to coma ; she loses all knowledge of persons and things, and power of movement. She has trismus, spasmodic stricture of the pharynx, so that deglutition is impossible. She seems incapable of articulation ; her eyes are fixed ; her eyelids closed. Her pulse meanwhile is soft and regular. This state lasted seven days ; in the course of it she was leeches behind the ears, and blistered, with little obvious effect. At the end of this time she recovered her senses, retaining but little impression of what had passed.

Epileptic hysteria.—The frequent absence of other hysterical phenomena in those who are attacked with this comparatively harmless series of fits, renders the term hysteria somewhat questionable. It rescues this class of cases from imputation of epilepsy, and the prognosis consequent on that supposition.

The first occurrence of a fit of this kind in a young lady of full and healthy figure, and of unskaken general health, whom I attended in 1838, was immediately after eating a hearty supper. But the period had been some time becoming irregular, deficient in quantity, and remote in occurrence. Her general appearance was that of excellent health ; her pulse was soft and quiet ; heart's action sluggish, tongue rather dry. The following facts were communicated to me incidentally : that she had been largely using the nostrum of Mr. Morison, just before the first fit ; that in the early part of her life she had been subject to violent epistaxis ; that the application of some leeches, which bled excessively, had changed this habit, but left her much shaken in strength ; that

she had grown rapidly in early life, then suddenly ceased to grow, and became very large in person; that she was subject to a state of coryza and defluxion from the nose, during which she was always quite free from fits; that they were irregular in occurrence, sometimes happening two or three times a day, sometimes being absent for many weeks, or even months; and that they came on generally with some recognisable moral or physical existing cause.

That uterine obstruction was the agent in this morbid state, I have no doubt. Whatever good I did this young lady, and some was effected, was in proportion to the relief which I afforded her on this hypothesis. Her longest freedom from the fit, while under my treatment, was while she underwent a course of Plummer's pill and extract of henbane, which, even when it did not increase the period, seemed to relieve the circulation, and render the pulse more open.

I have given the above cases, three of them from the valuable work of Mr. L. Villermay, rather as illustrating a principle of division, than as satisfactory specimens of its completion.

All these forms of disease require a method of practice which, as recognised in hysteria, I need not enlarge upon in this place. Confined to these groups of symptoms, this practice is safe, and often curative: extended to certain other symptoms which may present themselves in the hysterically disposed, but explainable on a different hypothesis, or applied to a more limited number of the above symptoms, I have endeavoured to point out that it is fraught with danger and mischief.

It must be admitted that the tendency to confound disease with diathesis or constitution is by no means limited to hysteria. Thus the word indigestion in its general use expresses a habit of constitution. So Dr. Johnson, so Dr. Paris uses it. But indigestion, as treated of by Dr. Wilson Philip, is a certain form of disease frequently recognised indeed in the dyspeptic. It is a subacute phlegmasia of the stomach, or more frequently perhaps of the liver. Meanwhile, those who should practise from his work, unaware of this virtual limitation of its subject, are liable to transfer therapeutics appropriate to the disease in the above sense, to that general habit more frequently characterised by the term indigestion.

If any leave this place with views indistinct and uncertain on the above disquisition relative to hysteria, I beg him to remember, that clearness of distinction must be commensurate with clearness of knowledge; and that hitherto the interesting subject of this evening's lecture has been enveloped in the most intricate obscurity. Meanwhile, let it be also remembered that if we postpone

the work of endeavouring to draw distinctions until our subject has become clear, we neglect the very means by which alone that point is attainable.

EXTRACTS FROM A PAPER IN THE DUBLIN
MEDICAL JOURNAL,

SHewing THE

EFFECTS OF HYDRIODATE OF
ARSENIC AND MERCURY.

Extract from Mr. Carmichael's Cases.
—In one case of lupus, of ten years' standing, in which great deformity had been occasioned by the disease on the features of a young lady on whom all the usual remedies had been tried, the liquor of hydriodate of arsenic and mercury produced most decided benefit, and seemed to put an immediate check to the progress of the malady. In one of my lectures, I stated the case of a man who had lost a great part of the vomer, and in whom much deformity had consequently ensued from an obstinate attack of lupus, who in the course of a few weeks so far recovered as to be discharged from the hospital apparently well. I perceive there has been no relapse of the disease, as he was told to return to the hospital should any suspicious symptoms make their appearance.

In another case in which the nose was affected, and not only the turbinated bones but the vomer had exfoliated, a perfect recovery took place after a three months' perseverance in the remedy.

Dr. Croker's Case.—Bernard Delany (about 8 years old) was affected with psoriasis guttata, particularly of the upper extremities. He got ʒii. of the liquor in an eight-ounce mixture, and took ʒiss. of that mixture night and morning. I tried the use of a lotion (equal parts of the liquor and water) on *one arm* for experiment, and the more rapid improvement of that arm was quite apparent. Soon after, the treatment was discontinued; yet the previous use of the remedy had been so efficacious, that when we last saw him we pronounced him cured.

Dr. Graves's Case.—Mary Cullen, aged 60, had been affected with psoriasis for fifteen years: the disease, at first mild and confined to a few parts of her body, gradually extended over almost

the whole surface of her skin; and when she was admitted into Sir Patrick Dun's Hospital, it presented all the marks of a most inveterate affection. On the 10th of November she commenced the liquor of hydriodate of arsenic and mercury, taking daily three draughts, each containing half a drachm of the liquor. After some days the medicine was discontinued, as it disagreed with both the stomach and head, but it was shortly afterwards resumed in smaller doses; and when the patient's constitution had become accustomed to it, the dose was gradually augmented, and finally she took half a drachm of the liquor four times a day for about two months. The effects of the remedy exceeded my most sanguine expectations, for it caused an almost total disappearance of the cutaneous eruption.

Dr. Irvine's Case.—It would be tedious to relate the entire history of this case: it is sufficient to say, that he took various remedies, Dulcamara and Plummer's pill among the number, without any benefit, unless temporary relief from itching.

From the experience of many cases which I had treated without permanent benefit at the Maison de Santé, with Fowler's solution of arsenic, iodine, and mercury, separately administered, I was inclined to doubt their efficacy; I therefore determined to try the compound of these three. My patient had now been upwards of three months under treatment, and to say the truth was little the better of all the medicine he had taken.

He took a draught containing ʒss , of liquor hydriodatis arsenici et hydrargyri three times a day from the 11th of February to the 28th of April. On the 28th of April the disease was quite cured.

Mr. Cusack's Cases.—I have used the liquor of hydriodate of arsenic and mercury freely in secondary venereal eruptions, both papular and scaly. I found the eruptions yield rapidly to its administration in the dose of one scruple to two, three times each day. In two instances the month became tender, and a slight salivation followed; but in no case have I observed any unpleasant consequences.

Sir Henry Marsh's Case, reported by Dr. Burton at Stevens' Hospital.—James O'Brien, æt. 12, labouring under

a disease having the character of impetigo figurata of strumous origin, covering the face, chest, arms, and thighs, but particularly well marked at the flexures of all the joints. Has been subject for many years to chronic bronchitis, with severe paroxysms of asthma. Curative means were employed, attended with more or less success; but whenever a mitigation of the cutaneous affection occurred, the cough and asthma returned with violence. Means having been employed to alleviate the bronchitic affection, Sir H. Marsh considered this to be a suitable case for an impartial trial of the solution of arsenic, mercury, and iodine (brought before the profession and prepared by Mr. Donovan), with a view to the removal of the skin affection. The dose administered was fifteen minims twice a day, increased gradually to one scruple, and finally given in half drachms. This mode of treatment was cautiously pursued for somewhat less than a month, with a gradual amendment of the cutaneous disease, which entirely disappeared, without aggravation but rather amendment of the bronchial irritation.

Dr. Charles O'Reilly's Case.—In the September Number of the Dublin Journal, you invite such members of the profession as have employed the liquor hydriodatis arsenici et hydrargyri, to acquaint you with the result. In accordance with that request I forward three cases, in two of which the success was complete. The third is considerably improved. Other remedies were employed in all the cases, both by myself and others; such as Plummer's pill, muriate of mercury, iodine, Fowler's solution of arsenic, vegetable infusions and decoctions, such as assarsaparilla, elm bark, dulcamara and articum lappa, with local applications in the form of solutions and unguents, without success. The first was a case of psoriasis diffusa, occupying principally the lower extremities. She was a married woman, and in the fourth month of pregnancy. Aware of the peculiar susceptibility of constitution during that period to salivation, &c. as well as the irritability of stomach that usually prevails during the early months of gestation, I hesitated to employ the liquor of hydriodate of arsenic and mercury at first, but finding the disease becoming more troublesome

and rapidly extending, I commenced with fifteen drops twice a day in a glass of barley water; the dose being gradually increased to thirty. When she arrived at twenty, which was in about ten days, she was compelled to desist from its use, owing to the sickness it occasioned: but not until the disease had completely disappeared, leaving nothing but a slight tinge on the skin. Three drachms only of the solution were administered.

My second case was one of tinea capitis, of two years' standing, in a boy of eight years old. I caused him to commence the solution as a last resource, having employed in vain the means suggested by Bateman, Planche, and Bret, and the parents using the empirical remedies, such as pitch-caps, ointments, &c. so frequently vaunted. The dose I commenced with was six drops three times a day, which I gradually increased to twelve, the largest given. In the space of one month, and before half an ounce had been administered, the disease had totally disappeared. In the case related, I also applied the following ointment to the diseased surfaces: equal parts of iodine and citrine ointments, as an adjunct to the remedy, although conscious from past experience of its inefficacy by itself. The last case was one of syphilitic lepra, rapidly improving under half-drachm doses three times a day. I have also witnessed its good effects in a case of psoriasis labialis. From my experience of its good effects in the above-mentioned cases, I have no hesitation in expressing my opinion, that the profession should feel deeply your debtor for the introduction of so potent a therapeutic agent into the list of remedies.

From the Case-Book of the City of Dublin Hospital.—George McGee, æt. 29, under the care of Professor Williams, was admitted July 14. On both lower extremities and the arms there are several patches of eruption, covered with a scale of silvery whiteness, elevated above the surrounding cuticle; but the scale is not so thick as in common lepra, and more resembles lepra papyracea. They are not painful, but exceedingly itchy. New ones, scarcely the size of the head of a pin, but covered with a scale like the larger ones, are scattered over various parts of the trunk and limbs. They spread

circularly; the scale falling off leaves the cuticle below red and tender, and is succeeded by a larger one which goes through the same process. The head, when shaved, disclosed the crown covered with yellow crusts, thicker and harder than those on the extremities.

Fowler's arsenical solution was prescribed for this man, and after continuing its use for a fortnight, and taking a warm bath twice a week, the eruption is nearly in the same condition as on his admission. The hydriodate of potash was then tried with him, but the lepra resists the hydriodate with the same obstinacy as the arsenic.

The patient was then put on the liquor of hydriodate of arsenic and mercury, five drops three times a day. After *one week's* use the lepra is beginning to yield to this remedy, which has been increased to ten drops thrice a day, and then to fifteen and twenty drops. Under the use of this preparation the lepra yielded slowly but steadily.

Nov. 10. The lepra has disappeared, except three or four half-formed scales on the legs. He now returned to his duty as a sergeant of police.

Case from Sir Henry Marsh, reported by Dr. Buxton.—James Landrican, æt. 12 years, admitted into Dr. Steevens' Hospital, December 16, 1840, under the care of Sir H. Marsh, labouring under a severe form of psoriasis guttata, manifestly of strumous origin: the eruption being most abundant upon the legs from knee to ankle, and upon the arms from elbow to wrist. States that he has been subject to this disease for two years; that it disappears at intervals from some parts of the body, while it shows itself on others; that since its first appearance he has not been entirely free from it; that none of his family labour under any similar affection. His general health is good: bowels rather inclined to be constipated; skin rough and anserine; perspiration very scanty: no internal organic disease can be detected. Sir H. Marsh considered this a suitable case for the exhibition of the liquor hydriodatis arsenici et hydrargyri, prepared by Mr. Donovan.

The patient took fifteen minims three times a day. This was continued during 39 days from date of admission, without producing much apparent effect. The dose was then augmented by fifteen

minims per day, and he was directed to apply a lotion two or three times a day to the eruption, consisting of equal parts of the liquor of hydriodate of arsenic and mercury, and distilled water. He was also placed in the vapour bath every second day. This treatment was continued until the sixty-fourth day from admission, at which time the eruption had gradually but wholly disappeared; the gums showed traces of the mildest insalivation; the general health was much improved; appetite good; skin softer; perspiration more free. He was discharged February 27th; and when last seen, three months from that date, he had experienced no return of the disease.

Dr. Robert J. Hickson's case.—I feel great pleasure in bearing testimony to the happy results which followed the administration of the liquor of hydriodate of arsenic and mercury in the cases which came under my observation. In an indolent ulcer on the temple of ten years' standing, in which the granulations were almost gristly, I tried various stimulants and escharotics, without the least benefit, and at the same time having recourse to constitutional remedies. I then administered Mr. Donovan's liquor, in the manner prescribed by himself, as an internal medicine and as an external lotion, which completely changed the character of the ulcer; it assuming a more healthy appearance, and secreting kind pus. In less than three weeks there was a perfect cure effected. In another ulcer on the instep, in which there was great irritation, I applied the lotion; and in two or three applications the irritability was effectually destroyed, and the ulcer healed by mild dressings. I have also tried its efficacy in a case of sibbens, in which there were high fungous excrescences from the ulcers, as an external application, and at the same time gave it internally. In this case I have also witnessed the same beneficial results, cutting down the excrescences, and completely eradicating the affection from the system.

Dr. White's first case.—Mary Aylmer had been afflicted with that form of disease called psoriasis diffusa, from the period of puberty, her age being now 18, a comely, well-grown girl, but of strongly marked strumous diathesis. The entire of the body, with the exception of the

face and hands, covered with the scaly patches, rough, chappy; the cuticle dry, red, and here and there deeply furrowed; the abdomen and thighs completely covered. She described her sufferings at night as intense, the greater part of which time she spent in scratching the inflamed skin. She had consulted many doctors with occasional temporary (only) benefit. I commenced the treatment by opening the bowels, a full bleeding from the arm, and the warm bath, which last remedy was occasionally used during the course of treatment: she then commenced the use of your solution. She consulted me on the 18th of April, and continued the solution without any other remedial treatment than that above mentioned, and on the last week of June she presented herself perfectly cured, and in the possession of excellent health and spirits.

Dr. White's second case.—A woman, aged 50, five years ago struck her face against a swinging scale in a dark pantry. The pain was not of long duration; but, some weeks after the injury, the part became acutely painful, interfering much with her sleep and general health. A hard rugosity was now felt about half an inch from the ala nasi of the right side, or midway between the angle of the mouth and nose. The progress of the ulceration was slow, the scab occasionally falling off; the edges of the skin being of a violet colour, with a doughy feel. At the time of using your preparation, the disease extended from the spot mentioned to the angle of the eye and nose of the opposite side, and presented the true characters of *lupus* with *hypertrophy*. Her general health good, but wasted with fretting and nocturnal pain: countenance pale, sallow, and cadaverous. I prescribed for her twenty minims of the liquor of hydriodate of arsenic and mercury, to be taken three times a day, with the application of a lotion consisting of equal parts of the liquor and distilled water. She continued taking her medicine until May 17, when five minims were added to each draught. On the 27th, in consequence of sickness and headache, they were discontinued for a week, and resumed and continued until the 20th of June, when they were discontinued, all traces of the disease having disappeared, nor has it returned.

Her general health is much improved, as much from the joy and happiness she experiences at the removal of so unsightly a disease. The lotion was applied frequently with a camel hair brush: the application was followed by a little smarting.

Mr. Jones's case.—I have great pleasure in being able to speak very favourably of the action of the liquor of hydriodate of arsenic and mercury. One case of lupus, in an early stage, came under my notice some time since. Conium, and every means that could be suggested to allay the pain, had been tried by two or three medical men, and no relief being obtained, the poor woman was for trying every thing she heard of. I was asked to see her in consultation with her usual attendant. I found the nose covered with a dark, hard scab, having a tuberculated feeling; indeed, as if there were some split peas under the skin: it was very hot, and the poor creature was quite desponding. It immediately occurred to me that it was a good case to try your remedy, and most gratifying was the result. I ordered twenty minims to be taken night and morning, and a lotion composed of one part of the solution with three parts water. The scab soon came off, the pain subsided, and the nose is now quite well. The scab almost came off in one piece, like the peel off an orange, leaving a healthy granulating surface underneath. I have also under my care a case of tuberculated disease of the skin of the whole face.

Mr. Jones's second case.—On the 4th of April I was requested to see the case in question, and found the whole of the bridge and *alæ nasi* covered with a dense horny crust, of a brown colour, having elevations about the size of a pearl barley, or a little larger, distributed about it; very hot, and painful to the touch. The disease had been of several months' standing, and was slowly but gradually increasing. Various remedies had been tried: cooling applications, stimulants, sedative poultices; but all to no effect: the disease was increasing. She had consulted a physician in the neighbourhood, who ordered the conium poultice. No good, however, resulted; and looking upon the case as one of tubercular disease, I thought it a very good one for trying your solution, and the best results en-

sued. I directed ten minims to be given night and morning, and a lotion composed of one part solution with three of distilled water to be kept constantly applied. In about a fortnight improvement was very evident: the crust afterwards came off quite whole: healthy granulations appeared, and by the middle of June it was quite healed; and the nose is now looking healthy and natural.

Dr. Bigger's cases.—I feel happy in being able to testify to the utility of the liquor hydriod. arsenici et hydrarg. first introduced to the public by you. I have found it useful in cases which had resisted the medicinal powers of the component elements separately. It was in cases of psoriasis that I have principally employed it.

John Gorman, about whom you spoke to me lately, had been afflicted with sycosis in the lower parts of the face and upper part of the neck. He had been treated by various medical gentlemen without success, and had been twice salivated before applying to me. Mercury having failed, I tried arsenic in the form of Fowler's solution, which he took for a long period without the slightest benefit. I then caused him to poultice his face regularly; and I applied a solution of nitrate of silver every second day to the surface whilst soft from the poultice, giving him at the same time half a drachm of your solution three times a day. There was manifest improvement before this plan had been pursued a fortnight; he was able to shave himself, and became more humanized in appearance. At the end of two months I ceased using the nitrate of silver, and your solution was alone employed. In four months from the commencement of treatment he was quite well. I saw this man yesterday, more than a year and a half since he was pronounced well, and he has had no return of the complaint. I should mention, that during the entire treatment he was exposed to the wintry weather, being a car driver: this may in some degree have retarded the operation of the medicine, but it did not cause it to produce any bad effects on the patient.

I feel very grateful to you for your kindness in giving this medicine to many of my poor patients who could not afford to purchase it; and I think the profession are your debtors for the

handsome manner in which you put forward your discovery in the *Dublin Journal of Medical Science*, as such a medicine, if kept secret, would have made the fortune of half a dozen empirics.

Mr. O'Ferrall's cases.—In reply to your note requesting to know the result of my experience in the use of the hydriodate of arsenic and mercury, I am happy to be able to say, that you are rightly informed as to the favourable action of that medicine in many cases in St. Vincent's Hospital. I am bound, however, to add, that in lupus I have not been able to accomplish a cure independent of local means. In certain forms of cutaneous affections the efficacy of the salt is very obvious, although it *has* happened in several instances that the benefit was exactly coincident with the action of its mercurial element on the mouth. Altogether, I consider it a valuable addition to the *Materia Medica*.

Dr. Ferguson's cases.—Since the conversation we had some months since on the subject of your "liquor hydriodat. arsenici et hydrarg." but three cases of any importance, to which I deemed it peculiarly applicable, presented themselves to my notice, the results of which it affords me peculiar pleasure to communicate to you.

Mrs. Dooley, the mother of five children, and nursing one four months old, was admitted into Sir Patrick Dun's Hospital, March 23d, presenting on different parts of her body, particularly the neck and scalp, well marked specimens of *rupia*. No syphilitic taint was suspected. Her constitution seemed much impaired; the disease showed itself on the fauces and palate; the conjunctiva and palpebrae were much inflamed. After preparatory purgation, this woman was ordered a six-ounce mixture with forty drops of the "liquor," to be taken in three doses during the day. This dose was at intervals raised to sixty drops in the day, on the 6th April. On the 19th, this dose was reduced one-third, in consequence of the appearance of some symptoms attributable to the arsenic. The reduced dose, however, was well borne until the 27th of April, on which day she left the hospital in greatly improved, indeed excellent general health, without any remains of the eruption, save tender eyelids. The only other

remedial agents employed in this case were occasional aperients, collyria, and one warm bath.

Miss —, æt. 35, of strumous diathesis, and subject to menorrhagia; for the past two years has laboured under *lepra*, in a rather aggravated form, the eruption being most excessive at the elbows, forearms, thighs, and legs. Had been for the greater part of that time under the care of two most eminent London practitioners, experiencing occasional relief, never entire removal of the eruption. In two months' use of the liquor, beginning with fifteen drops *ter in die*, and never exceeding twenty, the disease has entirely disappeared, and left an apparently healthy condition of the skin. Her general health is decidedly greatly improved.

Woulfe, æt. 50, an old soldier, admitted into Sir P. Dun's Hospital, May 19th, 1842, covered from head to foot with patches of *lepra*, most copious on the legs and back, of some months' standing. After brisk purgation, I ordered him a ʒvj. mixture with liquoris ʒiiss. ʒi. *ter in die*. 23d May.—I raised the dose to ʒij. to the ʒvj. mixture, ʒi. *ter in die*. 27th.—ʒiiss. June 1st.—ʒiij. 7th.—ʒiiss. In this case the medicine has never induced a single unpleasant symptom, but been perfectly tolerated. I have superadded occasional purgatives, with the hot bath about six times, and the beneficial effects already produced by it, I must say, have been quite satisfactory to me; the disease most markedly disappearing. This man's general health is greatly improved since his admission into hospital, and I have little doubt but a very short time will enable me to report his skin *natural*.

Concluding observations.—The foregoing cases have been selected from many in which cures were effected without any peculiarity worthy of observation; and it is by no means to be understood that the experience of the practitioners who have obligingly furnished them has been confined to that number.

In concluding, I may be permitted to make a few general observations on the preceding cases. It may be collected that the elements of which the liquor of hydriodate of arsenic and mercury is composed, do really acquire an increase of efficacy by combination; for we find, that diseases in which

arsenic, mercury, and iodine, had been separately tried without any good effect, were finally cured by the same agents when they were in a state of chemical union. Amongst the changes of properties induced on these substances by chemical affinity, an increase of medical efficacy seems to be one.

Thus, in Professor Williams's case, Fowler's arsenical liquor had been given for a fortnight without the least effect; and hydriodate of potash had no better success. But after one week's use of liquor of hydriodate of arsenic and mercury, in very small doses, the lepra began to yield, and soon after disappeared.

In Dr. Osbrey's case of psoriasis, the patient had been for two years under trial of various remedies without relief. When placed under Dr. Osbrey's care, Fowler's solution, mercury, hydriodate of potash, sarsaparilla, guaiacum, and soda, were used without making the slightest impression. Within ten days after the patient commenced taking the liquor of hydriodate of arsenic and mercury, the eruption began to decline rapidly; and in two months the woman was perfectly well.

In Dr. Charles O'Reilly's cases, Fowler's arsenical solution, iodine, calomel, corrosive sublimate, sarsaparilla, and the whole tribe of alteratives, had been ineffectually employed; yet the liquor of hydriodate of arsenic and mercury succeeded; in one instance, three drachms were sufficient, equal to three-eighths of a grain of arsenious acid; in the other, four drachms.

Dr. Bigger's patient had used mercury largely, as also Fowler's solution, without the slightest benefit; but under the use of the liquor he speedily got well. Dr. Irvine frequently failed with iodine, arsenic, and mercury, separately employed, but with the combination he succeeded.

There is abundant evidence that this medicine succeeds in the worst forms of disease, and sometimes in a very short period, when all the usual modes of cure had failed. Dr. Ferguson's patient had been for nearly two years under treatment, but unsuccessfully; yet in two months, the liquor of hydriodate of arsenic and mercury succeeded, when no more than two and a half grains of arsenious acid had been administered. Dr. Hamilton's patient had been under treatment for eight

years, without any apparent benefit; but when put on the use of the liquor, she recovered in a few months. Dr. White's patient, for years under the use of various remedies for an excruciating psoriasis, was cured by the liquor in seven weeks. On Mr. Jones's case nearly the same observation may be made. Dr. Hickson's patient had laboured under a disease for ten years, which was cured in less than three weeks by the liquor. Dr. Graves's patient suffered from what he denominates superficial lupus for four years, and had been treated in various hospitals with the usual remedies, both internal and external, and with sulphur baths; but all failed. The liquor of hydriodate of arsenic and mercury cured him within seven weeks, when he had taken but two and a half grains of arsenious acid. Dr. Kirby's case of pityriasis had been treated by various practitioners, and resisted every variety of treatment, general and local; after six months' perseverance in the use of the liquor, the disease gave way. The child treated by Sir Henry Marsh for tinea capitis had resisted various remedies during several months, but recovered perfectly under a three months' course of the liquor used internally and externally. Some of Mr. Stokes's patients had also resisted various modes of treatment.

The power of this medicine over lupus is evinced by the cases of Mr. Carmichael, Mr. O'Ferrall, Mr. Jones, and Dr. White. In Mr. O'Ferrall's case, local means were also necessary. Dr. White found the liquor itself adequate as a local application.

That the external application of this medicine, in the form of lotion, is useful, there is sufficient evidence; and this is a property of importance to those whose irritability of stomach and bowels will not permit its internal exhibition. The case of Dr. Croker clearly proves its power as an external agent. The same seems to be evinced by Sir Henry Marsh's second case, in which perseverance in small doses during thirty-nine days did no service, although when the internal use of it was assisted by the external application, the patient speedily began to get well. Mr. Jones's and Dr. Hickson's cases seem also to have received benefit from the local application. I have known several instances in which the external use of

the liquor alone was successful; but they were slight affections.

From the various statements it appears, that slight ptyalism sometimes supervenes on the use of the liquor of hydriodate of arsenic and mercury. This might be expected, inasmuch as each of the three elements of which it is composed is separately capable of producing this result. Arsenic is not so generally known to possess this power; but that it does was proved by Girtanner, of Gottingen, who exhibited arsenious acid largely in syphilis. More lately the fact has been again observed. That iodine possesses the same power is now almost as well known as that mercury does. I have observed, however, that when the liquor of hydriodate of arsenic and mercury produces ptyalism, it does so with less previous soreness of the gums than any other mercurial preparation, and often with none.

Mr. O'Ferrall found the effects of this medicine to be coincident with its mercurial action on the gums. Mr. Cusack observed the mouth to become tender in two instances only. And more generally a cure has been effected without soreness of the gums, or ptyalism, as appears by the silence on this symptom of those practitioners who have furnished the preceding reports.

INTERESTING CASE OF MELANOID TUMOR OF THE EYE.

To the Editor of the Medical Gazette.

SIR,

I BEG to forward you the history of a rather remarkable case which has lately fallen under my observation, and will feel obliged by its insertion in your journal.—I am, sir,

Your obedient servant,

WILLIAM W. COOPER,

Surgeon to the North London Ophthalmic Institution.

308, Regent Street, Nov. 23, 1842.

Mrs. Anne Wright, æt. 62, applied at the North London Ophthalmic Institution, on the 26th of August. She stated that for twelve years she had been subject to attacks of inflammation in her right eye, differing in severity, but always leaving a small red spot just at the outer margin of the

cornea. She had not been in the habit of applying any thing but warm water to the eye during these attacks, and they gradually passed off; the red spot, however, remaining.

Her health has been very indifferent for some years, her appetite impaired, and she is very subject to dyspepsia.

About two months previous to the date of her application, her attention was directed to her right eye by her friends remarking that there was "surely something the matter with it." Upon examination she discovered a small tumor arising from the point formerly occupied by the red spot; but it gave her no uneasiness, and she would not have been aware of its existence had it not been for the observations of others.

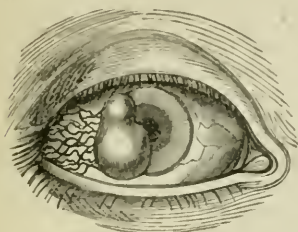
Upon examining the eye, I found a tumor of a dark blueish brown colour springing from the cornea, just at its junction with the sclerotica, and encroaching upon it nearly as far as the margin of the pupil. The base was firmly attached to the subjacent parts, and a number of enlarged blood-vessels proceeded from the external canthus, and were lost in its substance.

I carefully examined the interior of the eye, but could not detect the least appearance of disease in the deeper parts. There was nothing unnatural or unhealthy visible about the posterior portion of the globe, and the disease appeared to be quite confined to the anterior and superficial tunics.

Taking into consideration the extent of the attachment of the tumor to the cornea, the doubt as to the depth to which the disease extended in that tunic, and the difficulty of removing it by excision without opening the anterior chamber, and perhaps destroying the organ, I decided upon giving the patient the chance of its destruction by caustic, and applied the nitrate of silver freely. The following day the tumor appeared much smaller, but after a few days it had regained its former dimensions. The nitrate of silver was again applied more freely than before, but with no better success; and the suspicions which I had entertained from the commencement, of the malignant character of the disease, were strengthened.

I lost sight of the patient for a month from this time, but when I saw her again, the disease had made considerable

rable progress, and had assumed a rather formidable aspect. The case was seen at this period by Mr. Fergusson, of King's College Hospital, Mr. Dalrymple, of the Royal Ophthalmic Hospital, Moorfields, and my colleagues, Mr. Coote and Dr. Twining, all of whom agreed with me in considering the nature of the disease melanoid.



The important question then arose as to what would be the best and most judicious course to pursue: extirpation of the globe appeared too harsh a proceeding, as the disease appeared strictly local, and confined to the anterior portion of the eye, and we agreed that an endeavour should be made to remove the tumor from its attachment, and so give the patient the chance of recovery by the less severe operation.

Circumstances prevented the operation from being performed until the 18th of November, when I put it in practice, with the kind assistance of Mr. Fergusson and Mr. Coote.

The lids were separated by wire specula, and the instrument made use of was the convex knife for enlarging the section of the cornea in the operation of extraction.

Upon being grasped by forceps, the tumor gave way, and bled freely; but with care I succeeded in dissecting it cleanly away from its attachments, without injuring the anterior chamber. A doubtful point at the edge of the cornea was touched with nitrate of silver, but there was only one spot which seemed to require it.

The hemorrhage was rather free for a time, but ceased upon the application of cold, and the patient was put to bed, in a darkened room, and ordered to be kept perfectly quiet. Up to the present time not a single unfavourable symptom has appeared. The tumor was carefully examined with two powerful

microscopes by Professor Owen, Dr. Martin Barry, and myself, and the results obtained were as follows.

It appeared to be made up of nucleated cells of a discoid, elliptical form, of various sizes, flattened, and of different degrees of transparency; some



Nucleated cells.

nearly transparent, others full of dark brown colouring matter, like sepia. In some of the cells the nuclei were numerous; in others, not so; and there was considerable variety in size, as well as in form, but the elliptical character was more or less preserved throughout. Many of them resembled the human kidney in shape. In some parts there appeared a congeries of minute cells clustered together; in others, a few larger cells were connected one to the other. The largest was $\frac{1}{2250}$ of an inch in the long diameter.

There were also visible, fibres, which appeared to form the parietes of the cavities in which the cells were developed, and in some parts the mass was principally composed of them, there being considerable irregularity in the disposition of the cells.

The tumor, then, consisted of the above cells developed, and more or less accumulated, in the interspaces of the cellular tissue of the conjunctiva, sclerotic, and anterior layers of the cornea, with a corresponding increase of vascularity and disorganization of the part of the cornea so affected.

The tumor was soft, and of a dark brown colour internally.

I have now, sir, stated all the facts connected with this interesting case that are deserving of notice, and shall be happy to communicate to you the result, whether favourable or otherwise, if I have it in my power to do so.

In conclusion, I must beg leave to return my sincere thanks to those gentlemen whose names I have mentioned, and whose advice and assistance were as valuable as readily afforded.

EPISTAXIS.

To the Editor of the Medical Gazette.

SIR,

HAVING read in your journal of the means Dr. Negrier has adopted in arresting hæmorrhage of the nose, and as every successful case tends to enhance the value of improved treatment of disease, I forward the following, hoping it may find a place in your pages.—I am, sir,

Your obedient servant,
JOHN CHRISTOPHER DAVIE,
Surgeon.

Haddingham, Cambridgeshire,
November 14, 1842.

Richard Cuttriss, æt. 32, a miller, (Oct. 24th), for the last fortnight felt giddiness, and heaviness of head, and this morning was seized with bleeding from the right nostril, which continued for some time. Cold applications to the head, nose, and elevated position. Ordered the following:—

R Magn. Sulph. ʒvi.; Acidi Sulph. Dil. ʒij.; Infus. Ros. C. ʒvi. S. ʒj; 4tā q. h.

25th.—Hæmorrhage again returned from both nostrils to an alarming extent both arms were raised above the head: nares compressed; and in less than two minutes the eruption of blood was completely suppressed. As a precautionary means of avoiding danger, the elevated position of upper extremities, and pressure to the affected parts, were had recourse to for some time after, and I am pleased to say, with the happiest results, the effusion not having returned. The patient stated he had ten different attacks of bleeding; supposed he had lost in the whole a gallon of blood: upon the last occasion he lost more than a quart, besides what was swallowed.

For some days after his head was not free from uneasiness, and bowels constipated. Relieved by resinous aperients, and he has resumed his occupation.

SURGICAL CASES.

To the Editor of the Medical Gazette.

SIR,

SHOULD the following cases meet your approbation, you will oblige me by

inserting them in your valuable periodical.—I am, sir,

Your obedient servant,

JAMES D. BROWN,
M.R.C.S.

Haverfordwest,
Nov. 24, 1842.

Congenital vomiting.—A boy, 12 years of age, was brought to me from a distance of 18 miles, by his father, who stated that his child vomited every thing which he took either in food or drink, although the whole did not come back. The boy had been under medical treatment from infancy, but received no benefit whatever.

He seemed short, but stout, for his age; had a healthy appearance; his bowels were costive; thirst moderate; tongue clean and healthy; appetite good; and he vomited easily, without feeling nausea.

I carefully examined him, but could detect nothing wrong in his system to account for the vomiting; neither in the stomach, spine, nor head. I became incredulous about the case, when the father desired him to eat part of an apple which he gave him. He had eaten three mouthfuls, when he suddenly stopped, and back it came, mixed with a little saliva, &c.

I thought the affection essentially nervous, depending on excessive sensibility of the pneumogastric, &c., and concluded that, by allaying that sensibility, I should cure the boy.

I ordered him to live on milk and curd; to eat little at a time, but to eat often; and gave him ten drops of tincture of opium, and two of prussic acid, P. L., three times a day, in thirty drops of water. After taking the second dose the vomiting did not return. He took the medicine for two months, and is quite well, and much improved in appearance, and can eat any thing. He has now been well for four months.

Nervous affection.—A girl complained of a peculiar pain in the palmar surface of the index finger of the right hand; it was very sensible to the touch, and prevented her from sewing, &c. &c. as pressure gave her a stinging pain: it had been so for six years, and occurred directly after pricking it with a thorn: she thought that a part was still in the finger.

On the supposition that a nerve had been pricked, and partially divided, I made three or four deep incisions, so as to divide the nerves; and dropped into

them a strong solution of nitrate of silver: the parts quickly healed, the pain ceased and never returned, and she is quite well.

Lupus.—A young man came to me with lupus of some months' standing: part of the ala nasi was destroyed: the disease was progressing rapidly: no application had been made hitherto.

I gave him 5 grains of iodide of potassium, and $\frac{1}{2}$ of a grain of iodine, three times a day. I touched the part with nitrate of silver every three days. He got rapidly better, and was well in three weeks.

Scrofulous ulceration of the upper lip.—A girl had suffered seven years from an enormous enlargement of the upper lip, with superficial ulceration: it rendered her so disgusting that people refused to work in the same shop with her (she was a factory girl): various means had been adopted, but in vain.

I applied the chloride of zinc paste three times, allowing a week to elapse between each application: in three weeks it was entirely healed, leaving no thickening, and now seems quite natural. The paste consists of equal parts of flour and chloride of zinc.

Uterine hæmorrhage.—I attended a woman, æt. 34, in her fourth confinement: she was a person of lax fibre. The labour was natural, and terminated in six hours; but a violent fit of shivering seized her before the expulsion of the child. I was prepared for the event; and, as I expected, flooding came on to a fearful extent. The placenta was loose, and came away with the first gush. The uterus again dilated, but I passed my fingers into its cavity, in order to excite it to contract, &c. and at the same time made pressure externally, but hæmorrhage still continued in spite of every effort—pressure, cold applications, &c. &c. She had fainted, and recovered, and was suffering from the effects of the loss of blood.

I decided on trying the effects of pressure on the abdominal aorta. I had no difficulty in finding it. I made firm pressure on it, which gave the patient some pain. The hæmorrhage ceased directly, and did not recur: I had it in command: to feel satisfied of that, I gently relaxed my grasp once or twice, when bleeding again commenced.

I still kept up pressure on the uterus,

and administered secale cornutum in brandy and hot water. The woman rallied, the uterus contracted firmly and permanently, and I let loose the vessel, after pressing it for nearly two hours; and all went on as well as possible.

A similar case occurred to me, in about two months after. I adopted the same means, and with the same pleasing and important results.

I found no difficulty in finding the vessel, but I imagine there would be in a stout woman (unless the recti muscles were separated), but even then, relaxing the abdominal muscles would, I think, be sufficient to allow the hand to reach the aorta. I must confess that I thought it a difficult undertaking before I tried.

Some authors recommend it to be pressed from the interior of the uterus, which may be done when it cannot be got at *otherwise*: the one plan is not free from danger, the other is completely exempt.

I am surprised that so important a measure is not more general—a measure the principle of which is acknowledged in the most trifling surgical operations, the effects of which are certain and immediate, and the result the saving of life.

Squinting.—I have operated on 31 cases of internal strabismus with good success. In all but one I was aware at the time that it was a failure, yet I could not remedy it. The muscle was divided, the sclerotica cleared from all bands of cellular tissue; yet the eye remained as at first. I did not divide part of the inferior rectus, as Liston advises and practises, not knowing at the time that it had succeeded in such cases as mine; but should a similar case occur I will try it.

In one case the eye started forwards and outwards, and became more prominent than natural, but it was a catarrhous eye; yet withal, the appearance was much improved.

The sight is invariably improved in all cases where it was faulty before.

Frequently both eyes are implicated. I do not cut both the same day, fearing that the patient may not keep his eyes straight long enough to prevent the muscle from adhering too near to its former place. I tie up the uncut eye for four days, so as to prevent its influencing the other until all chance of the

muscle adhering too close to its former place is over: then I cut the other muscle, and uncover both eyes. It is positively necessary to operate on both eyes, when they are both implicated, although one is generally in a less degree than the other.

Certainty of the muscle being cut, and the eye free, is known by the total inability to look inwards, towards the nose, to that extent which the other eye is capable of. No surgeon should rest satisfied until he obtains that point, but should carefully clear the sclerotic coat from strong bands of cellular tissue which frequently are met with in such cases: if that fails, the incision in the conjunctiva should be enlarged freely, which I think, in some cases, tends to assist the cure; and in fact, I have seen a case in which a *free* incision answered, and where a *small* one failed, after the muscle was divided. In short, it is reasonable to suppose that the conjunctiva is, in some cases, quite sufficient to retain the eye; the slightest resistance acting constantly must overcome a greater acting irregularly. Duffin mentions cases of *relapse* cured by reaction of the conjunctiva.

If all fails, I believe cutting a part of the inferior rectus will answer: Liston has found it succeed. It is very difficult to recognise the muscle at times; sometimes it is very thin, and liable to be confounded with the cellular tissue; at other times very large, and easily recognised. I have seen it closely covered in by strong cellular tissue, so as to prevent the hook from seizing the muscle until it was properly cleared. In all cases a bold and free incision is best, one that will expose the muscle at once, free from its covering. The operation is sooner over, and gives less trouble and pain.

External strabismus.—A girl had external strabismus in consequence of paralysis of the third nerve; she had ptosis too, which was remedied by cutting a piece out of the upper lid in the usual way. I divided the external rectus as an experiment; the case was not benefited.

I have stated all the difficulties I met with, hoping they may be of use to beginners.

ON THE PERIOD OF PUBERTY IN NEGRO WOMEN.

To the Editor of the Medical Gazette.

SIR,

I READ, with much interest, Mr. Robertson's observations on the subject heading this short communication.

I believe this gentleman's views, relative to the supposed earlier period of puberty in the natives of tropical climates, for the most part correct. So far as my observation goes, however, but without having made any specific inquiry, I am of opinion that the period of puberty is of earlier occurrence in inter-tropical regions than elsewhere.

It is quite within my recollection to have observed very young negro girls on the coast of Africa, with the developed mammae, and other attributes of puberty, living in the capacity of wives, or mistresses, to the natives and others.

While I consider negroes in point of intelligence fully on a par with Europeans, I have always found it extremely difficult to ascertain their ages: when a question is put to them to this effect, they are quite unable to give any satisfactory reply. Judging from appearances, however, I should say that I have seen young persons, as wives and mothers, at the early age of fourteen. It is obvious, therefore, that this question can only be satisfactorily settled by those missionaries, medical practitioners and others, who have an opportunity of seeing the natives of inter-tropical regions from infancy upwards.

In other respects, women in these countries frequently menstruate, and consequently become nubile, at a much earlier period than is commonly supposed. I knew a young person who menstruated regularly at and after the age of eleven. I have also known menstruation to occur from the ages of twelve, thirteen, fourteen, and so on severally. Prostitutes, apparently of not more than twelve or thirteen, unhappily frequent the streets of most of our large towns. I saw a young woman brought in for delivery into the Dublin Lying in Hospital, in the year 1824, whose avowed, indeed apparent age, was only thirteen!

I remain sir,
Your obedient servant,
HENRY M'CORMAC, M.D.

Belfast, Nov. 20, 1842.

CASE OF HAY FEVER.

To the Editor of the Medical Gazette.

SIR,

THE following case may, perhaps, interest your readers, and is at your disposal.—I am, sir,

Your obedient servant,

R. R. CHEYNE.

43, Berners Street, Nov. 21, 1842.

Mrs. —, æt. 28 years, living in my neighbourhood, of a good constitution, and the mother of four children (the youngest being six months old, and at the breast), requested my advice on the 22d of September last. She had been suddenly attacked, the day before, with pain over the brow, soreness of the eyes, copious discharge of tears, sneezing, great dyspnœa and cough, with some pain in the chest, extending to the back, between the scapulæ. These symptoms continued severely whilst she remained at home, but left her entirely in the afternoon in the course of a drive towards Islington, where, having on her way ascertained my absence from town, she was about to seek advice. She returned home again in the evening, when she almost immediately suffered another attack of the same nature, which continued, more or less, through the night. I saw her the next morning, and observed symptoms like those above described; in addition, the stethoscope gave no indication of disease within the chest, more than deficient respiration consequent upon spasm. I advised antispasmodics and expectorants, which did no good, and then cupping between the shoulders, and the application of blisters, with very slight effect upon the complaint. In fact, the intervals between the paroxysms became daily less distinct; so that on the 28th, when Dr. Watson met me in consultation, the dyspnœa, &c., were nearly constant in a greater or less degree, and as an effect, not a cause, there existed excess of secretion from the bronchial mucous membrane.

Having found all the customary remedies totally inefficacious, I now looked around me for the reason of failure in some constitutional peculiarity on the part of my patient. I had observed a strong odour of hay upon entering the house, and, on inquiry, was told by the husband (a

stable-keeper) that his lofts were filled with hay, lately brought in, which, as he said, had an unusually powerful smell. I learnt, also, that my patient was always worse when the house was closed at night, and better in the morning, when there was a free current of air passing through the open windows. After carefully thinking over these facts, I was led to view the symptoms as depending upon a peculiar susceptibility to the effects of the flowers of grass, and to believe the case to be what has been named hay-fever, or asthma. In this opinion Dr. Watson concurred, and we accordingly advised our patient to take lodgings, without delay, away from the probable source of irritation. This advice, however, was not acted upon until two days afterwards, and, meanwhile, the disease continued to increase in severity, having resisted the influence of Hoffman's anodyne, which Dr. Watson had prescribed. At length, our patient removed into apartments situated about a hundred yards from the spot, and the immediate result was most striking and satisfactory. All the distressing symptoms at once subsided, and the first perfectly tranquil night was passed since the commencement of the attack. So complete and permanent was the relief experienced, that no further aid from medicine was required than the exhibition of a few doses of quinine, for the purpose of restoring the strength, and restraining within its natural limits the bronchial secretion. Our patient then went into the country for a fortnight, where she entirely regained her health, having previously lost every vestige of her complaint. As soon as she ventured home again, and during a few weeks afterwards, she suffered from slight cough, and some occasional dyspnœa; at the present time, however, she may be said to be free from either symptom. It is worthy of remark, that before her return to town a new stock of hay had been substituted for the former, which fact may, probably, explain the comparative immunity she now enjoys. However, it is more likely that the resistance—opposed by the nervous system when again within the sphere of the irritating agent—proceeds from the present increased vigour of our patient's constitution, which, previous to the first attack, had been a good deal impaired by suckling a strong

infant throughout an unusually hot summer.

The existence of the almost incredible idiosyncrasies of certain individuals is confirmed by daily observation. Thus, it is well known that some persons are affected with dyspnœa from the odour of the smallest particle of ipecacuanha. In others, again, the aroma of various flowers excites fainting, and I am acquainted with a lady in whom the same effect is produced by the odour of the pine-apple, or of the least quantity of whiskey. A number of other instances of a similar kind might easily be adduced; in every case the phenomena depending upon irritation of the sensitive nerves of the mucous membrane, and the reflected influence from the brain, &c. In the case above detailed, in which the symptoms seem clearly to have arisen from exposure to emanations from the flowers of grass, the cause of irritation was applied to the whole extent of mucous membrane from the nose along the pharynx and larynx to the lungs, being conveyed by the sensitive nerves of these parts to the nervous centres, and reflected back to the respiratory muscles. Certainly, the case very beautifully illustrates the series of actions that govern the sympathetic respiratory movements.

ON THE HEALTH OF SOLDIERS AT SEA.

By FREDERIC ROBERTS,
Assistant Surgeon, 59th Regiment.

(For the *London Medical Gazette*.)

On the 2d of January, 1841, the right wing of the regiment, consisting of 372 men, women, and children, to the West Indies, and some invalids for Malta, embarked on board H. M. Ship "Sapphire," a twenty-eight gun frigate, with her guns out; affording excellent accommodation; the height of her main deck being six feet seven inches, and of lower six feet; carrying plenty of water in iron tanks, provided with wind-sails, and funnels at the sides communicating with the lower deck, and furthermore a dry vessel, and good sailer.

Geographical situation.—The voyage commenced in lat. 39° N. and Long. 20° E., varying little in latitude as far as

Gibraltar, when our course lay in nearly a south-westerly direction, till we reached Barbadoes in lat. 13° N. and long. 59° W. and from hence N. N. W. to Antigua, in lat. 17½° N. and long. 63° W. On reaching Barbadoes we had consequently made 22° to the southward, and 83° to the westward. Though three months on board ship, the monotony of the voyage, and the quality of the food, were agreeably changed by lying for several days in harbour at Malta, Gibraltar, Barbadoes, and Antigua.

Meteorological phenomena.—On the day of sailing from Corfu, the thermometer stood at 60°, and at the completion of the voyage, as a natural result of our position on the globe and progress of season, 83°; making a difference of 23°; but the extreme range was 35°—the mercury having fallen as low as 48°. The extreme range in the day was never more than 10°. The change in the temperature may, then, be said to have been gradual till reaching the tropic of Cancer, when it increased with greater rapidity (in the ratio of exactly one degree daily). The prevailing winds, while sailing in the Mediterranean, from 2d January to 28th of February, were N. W., W., and S. W. with frequent strong gales, occasional rain, and a moist atmosphere. In the Atlantic the wind blew with uniform force from the east, and its collateral points.

The return of sick during the voyage (exclusive of invalids landed at Malta) is submitted in Table No. 1, and the nature of the diseases is shown in No. 2.

TABLE I.

Corps, 59th Foot.	Strength.	Total number of sick admitted.	Number of deaths.	Sent into hospital at Gibraltar.	Average daily sick	Remaining.
Officers and Men.	307	67		1	84 $\frac{9}{10}$	
Women.	23	10			14 $\frac{4}{10}$	
Children.	42	24			32 $\frac{3}{10}$	

Corps, 59th Foot.	Fever.		Diseases of the chest.		Diseases of the liver.		Diseases of the stomach and bowels.		Rheumatic affections.		Diseases of the skin.		Wounds and injuries.		Phlegmon and abscess.		Diseases of the eyes.		Venereal diseases.		Ulcers.		Other diseases.		Total.	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Officers and Men . . .	10		7		1		13		1		1		11		8		4		3		4		4		67	
Women . . .	3		2				4		1		10		2				1						1		10	
Children . .	1		8				1																		24	
Total . . .	14		17		1		18		2		11		13		8		5		3		4		5		101	

TABLE II.

Review of the prevailing Diseases.—The fevers among all classes were epidemic, and require no notice. The diseases of the chest were slight catarrhal affections, and one case of consumption in a recruit, who was left at Gibraltar. These affections were observed most conspicuously to occur during the gales of wind, and it was then the children were attacked almost entirely.

Diseases of the stomach and bowels.—These were principally slight cases of diarrhoea, the greater part of which happened on the voyage from Malta to Gibraltar, the longest period at sea and deprivation of fresh meat, and during which the weather was coldest and most wet. But few cases of constipation occurred.

Diseases of the skin.—These were cases of "prickly heat" occurring on reaching the warmer latitudes, chiefly in children. This species of prurigo yielded immediately to sulphur.

Wounds and injuries were cases of more or less severe bruises and cuts received in working the ship, and in falling down the hatchways during the gales. One man received a concussion of the brain and injury to the back by the falling of a quarter of beef from the fore-topmast head upon him in a gale of wind. I introduce his case for the purpose of shewing that he was ultimately attacked with scurvy. He was of a phlegmatic temperament, and prone to indolence at all times, and made but slow progress towards the recovery of the injury. Having been under treatment for five-and-twenty days, still in a weak and listless state, an inelastic swelling of the legs and feet, with livid blotches, swelling of the gums, slight hæmorrhage, loose teeth, fœtid breath, and lassitude, became apparent; and in nineteen days after, his health was completely recovered by the use of quinine, lime juice, preserved meat, and wine. Whilst slowly recovering from the injury, it is instructive to observe that this man was attacked with scorbutic disease; certainly when he had been much reduced, and when lying in an inactive state during the coldest and most moist weather we met with; but he had been several days in Malta harbour, and had never tasted salt meat since he had been on board, and had been fed on

wholesome farinaceous diet whilst sick. It would appear, therefore, that the exciting cause of scurvy, under circumstances of debility, with exposure to the predisposing influence of an atmosphere charged with moisture, as it must be generally at sea, may be very slight.

Phlegmon and abscess.—Under this head are placed some cases of boils which occurred during different periods of the voyage, and which were observed to come early to maturity.

The cases of diseases of the eyes were infection of the conjunctiva without purulent discharge, which occurred when the men were exposed during the gales to continued streams of strong wind, which irritated the membrane by its force and constancy.

Ulcers and other diseases were slight and few. Sea-sickness effected little inconvenience, except at first, and that among the men and women chiefly: the children being remarkably free from it.

A remarkable exemption from disease at sea will be perceived in the above tables, which show, in round numbers, the average ratio of admissions for *three months* to be 22 per cent.; whilst Major Tulloch's Reports show the same *annually* to be among the cavalry in the United Kingdom nearer cent. per cent., and in the Prussian army 111 per cent. The average duration of each attack, for three months at sea, among 307 men, is 12 days; whereas, among 1000 dragoons at home, it is 16 days: showing further a greater degree of severity in diseases on shore. The medical records of the corps likewise show the average daily sick for eight months at Corfu, where its average strength was 629, and where it was at first sickly, to have been 54. The previous year at Malta, out of an average strength of 505, it was 26; and on board ship, the strength being 307, it was nearly 9.

In comparing the relative extent of sickness among the troops on shore and at sea, we eagerly avail ourselves of the opportunity of shewing (as far as can be determined from a small number and a short period) the salubrity of a sea voyage, and its tendency to re-establish the health of the men, on removal, as in the present instance, from a comparatively healthy to an unhealthy station, and enable them to withstand the severity of climate—an argument, were there any wanting, in favour of the system of

relieving regiments *often* in foreign stations.

Much has been said and written latterly respecting the causes of disease in the army: it is not our intention, however, to speculate upon so intricate a subject: but a circumstance of so marked an aspect as we have shown above has naturally led us to notice those circumstances which appear to modify the influence of the physical agents on the body. Knowing what wonderful difference in corporeal structure is produced by the physical agents, even in a state of health (familarly exemplified in the physical conditions attained by prize-fighters and jockeys by training, and in many defective corporeal states, in which, however, it must be understood, the functions of life are performed with comfort and a sense of well-being), it is but reasonable to consider that a large proportion of disease is the result of some irregularity in the application, or of an altered mode of operation, of these agents. The history of disease shows that “although seemingly contradictory facts and complex circumstances present themselves amongst the alleged causes of disease, still the removal of these causes, by attention to food, drink, draining marshes, and airing dwellings, &c. &c. have often removed these evils;” although even “*these causes have been shown to be at variance with numerical results*”*.

In addition to what has been premised at the commencement of this report, we shall finish the description of the physical position of the troops at sea, by remarking that the soldier's diet on board ship is good, and properly regulated; and, from the nature of his situation, relatively more abundant, and is always varied by the issue of fresh meat in harbour, and for some days after. He is not subject to the influence of intemperance, but receives his quantity of grog daily, with the addition, after a certain period, of lime-juice—a means of obviating, under general circumstances, a disposition to scurvy, and an intention which is only marred by converting its stoppage into a means of punishment. His habitation is crowded; but the means for renewing the fresh, and for the escape

* See Statistical Reports of Sickness in the British Army. By Major Tulloch.

of the heated air, so well obtained through the hatchways, wind-sails, and funnels, appears to obviate all injurious effects, especially when aided by frequent cleaning and sprinkling of chloride of lime on the decks. The plan of dividing the men into three watches, one of which is kept constantly on deck, and keeping the women and children above when the weather permits, pretty fairly compensates for the deficiency of fresh air below at night. Cleanliness is insured by frequent inspections after washing the greater part of the body. The working of the ships, which requires more mental energy in the exercise of a mechanical talent than the soldier is called upon to exert on shore, music and dancing, reading, and the novelty of situation, divert the mind, and contribute to the support of his health. His rest, too, which, on the average in the last two stations was disturbed every three nights and a half, and exemption from inclemency and vicissitude of weather, in conjunction with the above moral and physical conditions, operated so much, in this instance, on the health of the men, that, on landing in the West Indies, they presented buoyant and vigorous frames; and for many days previous not a man had been sick.

The circumscribed situation of a soldier on board ship would appear to render the causes of his complaints more palpable, and, in a properly regulated vessel, to bring them more under control—a circumstance that, besides attracting attention to the correction of the influence, and encouraging endeavours to elucidate the mode of operation of the physical agents, would suggest the nicer search from analogy of the causes of diseases on shore.

Antigua, April 25, 1842.

ON THE
SPLEEN AS A CONTRACTILE ORGAN
PROPELLING THE BLOOD
THROUGH THE VEINS.

To the Editor of the Medical Gazette.

SIR,

A FEW remarks on this important question, as lately advanced in the form of what I consider to be little more than pure hypothesis, may not, I think, be uninteresting to the profession. Mr. Jack-

son has, as is well known, laid before the public some peculiar views on the use of the spleen, placenta, &c.; tending to the conclusion that the placenta and spleen are vitally contractile organs, capable of acting intermittently, and as real adjuvants to the circulation of the blood.

After a careful perusal of the original work, I am led to the conclusion that there is no ground whatever for believing the spleen to be a vitally contractile organ. The arguments adduced by the author in favour of such an opinion are the following: viz. 1st. The experiments made by Magendie; the injection of fluids into the circulating mass, when the spleen becomes enlarged, and the diminution in size of the same organ in animals bled to death, or fainting. M. Magendie observed the same effect in the liver, under similar circumstances. But these experiments cannot, I think, be considered as the slightest proof of any thing more than that the spleen is an elastic organ, ordinarily existing distended to a certain extent, but capable of further distension by influx of more blood. Our author finds a regular relative proportion between the spleen and the liver in man and other of the higher animals; he describes it in man as 6 to 1; and in quadrupeds as 12 or 16 to 1: whereas, MM. Bichat and Cruveilhier say that “the spleen varies so much in size, that it is almost impossible to say what are its normal proportions.” The next argument is founded upon the fact that strychnia, morphia, ergot, &c. produce contraction of the spleen. But here it must be recollected that in the cases alluded to, death has taken place in one of two ways—either the animal has died violently convulsed, or (as in Mr. Wright’s cases of ergot), they have lingered, become extremely weak and emaciated, so as to die of exhaustion. This latter condition, in consequence of the great diminution in the volume of circulating fluid, reduces the system to the same state as in Magendie’s second experiment; and in those animals which die convulsed, we cannot wonder at the spleen being diminished in volume, if we regard the enormous compression all the abdominal viscera must be subjected to by the powerful muscular contractions.

But let us suppose the spleen to be a

decidedly muscular organ, similar even to the heart, and contracting like it intermittently. Would this, then, answer the purpose assigned to it? Certainly not. The vena porta does not only receive blood from the spleen, but the larger part* of its volume is contributed by the superior mesenteric vein. The splenic vein would not be able to suck up the blood from this vessel. So that I think we have two most powerful reasons for not assigning any such function to this organ: 1st, because we have not the slightest evidence of its contractile power (*i. e.* more than that of elastic tissue in other parts, mere elasticity), and 2d, because even if muscular, it could not answer the desired end. Had the mesenteric vein been very small, its blood might have been taken up as the contents of the thoracic duct into the junction of the jugular and subclavian veins. The ordinary experiments, (as contrived by Bernouilli) proving the friction of fluid particles on each other, illustrate the necessity of rapidity of current, and disparity of size of the tubes.

Did the spleen perform so important an office, its removal could not take place without marked disturbance of the biliary and digestive apparatus. On this point Mr. J. says (p. 85), "When we reflect that other organs, as the uterus and kidney, have been lost; that in *hernia cerebri* a portion of the brain has been sliced off; that one or more, or even all the extremities, have been amputated, and that notwithstanding such mutilations patients have recovered, it does not appear so extraordinary that the loss of the spleen is not necessarily a fatal occurrence." Had the spleen been of the importance assigned to it, it would have been a very extraordinary circumstance for the digestion to be perfected, bile well formed, and the body to thrive, whilst one of the vital organs, (as it then would be) were absent. But I consider this to be one of those statements continually made by authors who are attempting to establish a theory, and that it shows how blind they are. The fact is, the parts mentioned by the author are not any more vital than the spleen as it naturally exists is. Had the spleen performed the office assigned, its absence ought to cause great disturbance—

arrest of nutrition, and finally death. Is it so with a leg or an arm? or a uterus? or even a kidney? The parts here mentioned, we should much wonder if their removal did occasion any permanent mischief, (the operation whether artificial or accidental) omitted. We know if one kidney be lost the other performs compensating function; and if a slice of brain be lost, according to the opinion of the phrenologists we should have some cerebral function lost. But take away both kidneys, or the whole brain, the animal will die. Supposing the spleen to answer the proposed end, what part can perform its functions when extirpated? None. In fact, the spleen really cannot be for any such purpose. The author himself says, "in dogs, after extirpation of the spleen, *the undiluted blood filters through the liver, and flows into the general system by the hepatic veins as fast as it is admitted into the trunk of the portal system.*" If the spleen, then, be the propeller, how is the blood propelled during its absence? Our author argues, that because the branches of the portal veins are surrounded by cellular tissue, and collapse when examined after death, the flow of blood is not constant but intermittent. But such an induction is not necessary: it is much more probably so arranged for the sake of permitting distension; at least we find other such arrangements in other parts of the frame.

We find it mentioned that dogs, after having had the kidneys extirpated, micturate oftener than other dogs. This, it ought to have been stated, has been denied by two excellent authorities, viz., Tiedemann and Gmelin. The author next explains why this takes place, and to finish, produces an example of just the reverse, viz., Mr. Ferguson's case, where a man lost a great part of his spleen by gangrene, and constantly complained of difficulty in making water. Considering, therefore,

1st, That there is no evidence of the spleen possessing any more contractile power than is quite consistent with elasticity;

2d, That if it were even muscular it could not answer the proposed end;

3d, That it may be removed from the body without material alteration of the biliary and digestive functions;

4th, That the circulation in the liver can be explained in a more rational

* Cruveilhier: Anatomie.

manner (although if it could not, it would be better to acknowledge ignorance, and make more experimental inquiries than to rest satisfied, feeling assured that we are wrong).

I think the principle in hydrostatics, of fluids*, in bent tubes, finding their own level, will adequately explain the mode in which the blood arrives at the portæ from the spleen and the superior mesenteric vein. This also explains the passage of blood up the inferior cavæ. The use of the hepatic veins terminating in such large and always open branches, is readily understood by looking at the forces causing the right ventricle to be filled.

I believe, with Dr. Billing, that the principle above mentioned is a grand cause of ascent of blood in the inferior cava; this, also, as I have said, explains the means by which the blood ascends from the spleen and superior mesenteric vein; also it enables (what we find to be true) the circulation through the liver to be carried on, notwithstanding the removal of Mr. Jackson's hepatic heart. This also explains the use of valves in veins in which they are found, and gives us a reason for their absence under the opposite circumstances: for instance, wherever the veins are exposed to the influence of muscular contraction, there we have valves; but in the veins of the cavities we have none. Another power by which the blood is impelled into the right auricle is the expansion of its walls, be it active or passive. I think myself it is really passive. When, then, the auricle contracts and propels its blood into the right ventricle, the auriculo-ventricular valves prevent its return; the auricle then expands, and what must be the consequence? the blood flows in from the cavæ; to assist this, I consider the large hepatic veins remain open and filled with blood, as stated by Mr. Jackson. The right ventricle, also, by its dilatation, would tend powerfully to draw the blood from the right auricle, were the walls of the latter not muscular. I cannot conceive that this influx is at all connected with either inspiration or expiration. If so, as the pulse is ordinarily in the ratio of three to one to the breathing, we should only have

the auricle filled once during every three contractions of the heart.

I may take this opportunity of stating my opinion in regard to one statement made by Dr. Billing, viz., "in inspiration there is no suction, for the glottis is sufficient to admit a free current of air." "Such an opinion is inconsistent with the laws of physics." If there be no suction, why does the air rush into the chest? That suction, then, really exists, appears to me quite obvious; so much so, that I am surprised to find so talented and accurate an observer make such a statement. The explanation of the use of the spleen given by Mr. Dobson appears to me, as well as to some of our first physiologists, as a very rational one; he says it acts as a safety-valve, so as to prevent any ill effects at times when the circulating system would be loaded by its distension, and contraction when that dilatation was over. This fully explains why its size so varies; why the vena portæ is surrounded by cellular tissue and distensible; why it has such thin coats, quite contrary to vessels which are exposed to any vitally contractile force; and why patients who have lost the spleen suffer from hæmorrhage occasionally. I now take leave of this subject, hoping that I have thrown a little light upon the matter; and I shall take another opportunity of attempting to show that the use of the placenta and its "vital contraction" are considerably more questionable than our author supposes.

I am, sir,

Your obedient servant,

A CONTRIBUTOR.

London, Nov. 25, 1842.

ANALYSES AND NOTICES OF BOOKS.

"L'Auteur se tue à allonger ce que le lecteur se tue à abréger."—D'ALEMBERT.

Essays on Determination of Blood to the Head. By ROBERT HULL, M.D. &c. London and Norwich, 1842. Small 8vo. pp. xlv. and 154.

OUR ingenious and learned correspondent, Dr. Hull, has written these essays in order to warn students and practitioners against the abuse of blood-letting; and he has conveyed his in-

* Described by Dr. Billing, *Principles of Medicine*.

structions in a style where good sense, good humour, quaintness, and classical quotation, are so agreeably intermingled, that one could hardly wish any of the ingredients to be absent. Thus, to take the case of *Laridus*, who had received a gash in the abdomen from an assassin.

"It was a horrible chasm to look into; with its perpendicular walls of fat; but there existed no evidence that the abdominal cavity was laid open. But the surgeon, a most accomplished practitioner, bled him again and again, over fearful lest peritonitic symptoms *should* arise. He died. The cavity of the abdomen was entire. But it was found that the deep chasm was as the assassin had made it. No lymph had been thrown out to consolidate the surfaces, which, instead, were sloughy and universally discoloured. He died, the victim of the friendly, not the hostile weapon.

ἔκων γὰρ ὅλεσάς νιν. ἀνθρώποισι δὲ,
θεῶν διδόντων, ἕκδς ἐξαμαρτάνειν.

Touching the use of the lancet in capital disorders, I am not pretending to depreciate it, when needful, nor to direct it in the numberless varieties of disease. I only wish to impress upon the student; and all are students, who are even practising physic; that in medical, as well as judicial, conditions, the doubt should tell in favour of the pannel. So sacred is blood, do not spill it upon conjecture."—p. xxii. iii.

"*Cephalea Siphylitica*.—Here the diagnosis is the important affair. Some think the intermittent, nocturnal character of the ache to be decisive.

Intermissa, Venus, diu
Rursus bella movent."—p. 59.

Clinical Midwifery: with the Histories of four hundred cases of difficult Labour. By ROBERT LEE, M.D. F.R.S. &c. London, 1842. Small 8vo pp. 224.

OUR readers are well acquainted with the labours and the merits of Dr. R. Lee. The communications with which he has at different times favoured us, and the lectures with which he is now enriching our journal, will have prepossessed them for any work from his pen; and "*Clinical Midwifery*" will not disappoint their expectations. The book is divided into eight chapters or "Reports." The first report consists

of observations on the present state of operative midwifery, and the histories of fifty-five cases of difficult parturition, in which the forceps was applied.

The second is on difficult labours from distortion of the pelvis, swelling of the soft parts, &c., in which delivery was effected by the operation of craniotomy.

The third report is on the induction of premature labour in cases of distortion of the pelvis, cancer of the gravid uterus, uterine and ovarian cysts, and tumors, &c. &c.

The fourth is on difficult labours from presentation of the superior extremities, nates, and funis.

The fifth is on the causes and treatment of uterine hæmorrhage in the latter months of pregnancy, with the history of thirty-six cases of placenta presentation.

The sixth report contains the histories of thirty cases of uterine hæmorrhage, in which the placenta had been detached from the upper part of the uterus.

The seventh is on cases of retained placenta.

The eighth and last is on labours complicated with puerperal convulsions. Dr. R. Lee's work will be consulted by every accoucheur who practises his art with the zeal which it merits.

MEDICAL GAZETTE.

Friday, December 2, 1842.

"Licet omnibus, licet etiam mihi, dignitatem Artis Medice tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

MEDICAL STATISTICS.

THE general principle of *ascertaining* facts is perhaps the most important to the progressive improvement of the art of healing; then follow the registering and the combining of those facts. The ascertaining of facts in the earliest ages, when the sick were placed in public thoroughfares to receive advice from the experienced, and the registering of these facts by means of votive tablets, enabled the Father of Physic to

carve out his great image of nosology, so dignified in form and so accurate in detail, and to place round this, his principal figure, some appropriate groupings in the form of therapeutic agents, hewing out of materials scattered and difficult of access, an object admirable to after ages, and bearing colossal marks of genius. This work, remarkable for symmetry of form, vigour of execution, and faithfulness of detail, is still the admiration and the model of the studious man of taste, and often serves as a rebuke to the flippancy of supposed inventors.

The tendency which leads to the combination of individuals for carrying out various objects, may almost be regarded as instinctive in man; so readily, so immediately, does he resort to association when any object of difficult and distant attainment is presented to his view.

But the ascertaining and registration of facts is a task which holds out little encouragement to the superficial and the careless. The most reasonable doubt as to the value to be calculated on from a large amount of statistical information, arises from the scarcity of those qualities which are required for its beneficial prosecution:—a scarcity absolutely great, relatively greater still; for facts, to be useful, must be very numerous. Half the truth is little better than a lie. There is no mischievous theory whatever that does not tell the truth in part; and the *fact* that Mrs. A—— and Mrs. B—— got through their ailments with Morison's pills, causes more evil than the death of a peeress, with the same aid, would neutralize.

It remains to be seen whether or no we have the *material* for raising up a body of accurate observers and patient recorders, in a profession which demands, for its successful practice, an especial degree of intelligence and

promptness; and where the very appearance of indecision is apt to be fatal to a reputation for cleverness. There are two or three points in which every individual may promote the good cause; and without stopping to inquire how far public men neglect their great opportunities, we wish to shew private practitioners, who, after all, have the conscience of the profession in their keeping, how they may best enlighten that conscience, and remove temptations to neglect its warnings, and to shrink from responsibility.

1st. Let every case we attend be registered. The form proposed by the Committee of the Statistical Society is not perhaps perfect, but is very excellent indeed; and, if only because the most commonly adopted at public institutions since the date of the circular issued by that Committee, is unquestionably the best. When modifications are found necessary, let them be discussed and agreed on. A decimal currency may be abstractedly better than our own, but every man will do well to keep his accounts in pounds, shillings, and pence, for the present.

2dly. Let this registration be done, *partly* at least, in presence of the patient; details may be filled up at leisure. Nothing is lost by this, even in the most exalted private practice. Those who have uniformly adopted it have in the end secured the confidence of their patients in the highest degree. This should not be misunderstood. It is not meant that a dull man, who laboriously registers every symptom, will succeed better than a clever man, whose practice in this respect is more off-hand, but that both the dull man and the clever man will succeed better with registration than without.

Where treatment has been carelessly conducted, patients are apt to attribute success to individual cleverness. This gives a manifest advantage to the

quack, who is not seldom possessed of that cleverness, and is of course more dexterous in the manner, and unscrupulous in the means, of turning it to profitable account. Failure in like manner is attributed to personal deficiency, producing loss of reputation to the individual; or if he be supposed to have his whole art actually at his fingers' ends, then the blame is laid on the deficiencies of our craft—to the manifest advantage, in this case also, of unscientific pretenders.

The practitioner who registers his cases with their treatment, gains a just and legitimate property in them, evident to the patient, who feels that a careful record of his case, and of the curative means which have already been employed, is deposited with his medical adviser, whom he therefore knows to be the best person to consult upon it in future. It is not surely too Utopian to imagine that some day a medical ledger may contain, not nauseating columns of the different sized phials emptied by the patient, with the details of their prices, "of no use to any one but the owner," but a record of nosological and therapeutic facts, grouped with judgment, tabulated for reference, and ready to form an additional layer in the solid edifice of inductive science.

In a consultation too, the junior practitioner could produce his notes, and enrich them with the experience of his senior: the respect due to each would be increased: diligence on the one hand, penetration and experience on the other, would be combined for the benefit of the patient.

There is a fear, perhaps, of reducing men of talent to the level of dull mediocrity, and some will feel about it, as the brave warrior did on the introduction of gunpowder;—his art of fence, and his personal bravery, gave him no advantage over every clown who could pull a trigger.

But let not the most brilliant and acute practitioner fear the consequences of a general adoption of the numerical method in recording accurately different modes of treatment; rather let him rejoice that his talents will have a wider field for their exercise. That invaluable tact which so distinguishes one man above another in circumstances of doubt and difficulty, and which seems to consist in the power of practically bringing to bear all the available knowledge, and energetically concentrating it on the most important points of a case, will always be a ground for preference, and a prime element of success. Every enlargement of the sure basis of facts increases the chance of a science being raised higher towards the pure regions of abstract truth. No number of years ever passes without some plausible theory being constructed, which excites much admiration, and seems to promise a speedy ascent to the much-desired heights; but, after a time, each in its turn is found to have been unsubstantial, to have melted away, and to be recognised only by the facts which it had contained, and which have settled down to form in their turn a substratum for other theories and for other facts.

There is, of course, some risk that an undue value may be ascribed to this numerical method, and that the theory of not theorizing may prove as delusive as any of its predecessors. To deny this would be to overlook the tendency of the human mind to make a bad use of all that is good. And it will contribute not a little to the prevention of such an evil consequence, if the business of observing and recording be undertaken with caution, reflection, and fore-thought, with a wholesome distrust of first results, and a willingness to go on diligently and cheerfully in the work of notation, during those tedious intervals which

will necessarily occur between the complete working out of different interesting problems. Something of the patient perseverance of the alchemist will be required—of that faith in the reality of the good sought for, and of that modesty which attributed so many failures in the search to the unworthiness of the seeker. If these mistaken men produced some most valuable substances, while toiling over their crucibles, under all the disadvantages of imaginations heated, and views distorted by theories and speculations no wonder, then, that after the great counterblast had been sounded by Lord Bacon, we find Hooke thus writing:—"The science of nature has been too long made the work of the brain and of the fancy; let it now revert to plain and sound observation, and let all intelligence be severely examined; let there be rigour in admitting, strictness in comparing, slowness in debating, and shyness in determining." But "this most diligent experimenter, who recorded his results with all that cautious sobriety which he advises," (as Mr. Brande tells, in his history of the origin and progress of chemistry,) was led by his genius to discard the favourite notion of an element of fire, a notion which seemed inseparable from the chemistry of his day, and to venture on a theory of combustion truer by two centuries than the "phlogistic theory," which for a time supplanted it; and for his chastened theoretical aspirations, he pleads thus apologetically:—"If ever I have ventured at *small conjectures* respecting the causes of the things I have observed, I beseech the reader to look upon them only as doubtful problems and uncertain guesses, not as unquestionable conclusions, or matters of unconfutable science." Such men, and in such times, need not, and do not, preface a course of lectures with a bonfire

made of the writings of their predecessors, or rivals. The modern school of chemistry (essentially one of weight and measure), has certainly not been deficient in brilliant theories. Our present searching examinations, stethoscopically, microscopically, and statistically pursued, are so many ways of interrogating nature. We are asking her a vast number of searching questions, to some of which, no doubt, within the next twenty years, we shall obtain categorical answers.

One most beneficial result to be desired and expected from judicious statistical inquiry is the keeping our profession in its proper relation as the adviser of the state, to be referred to with confidence on important questions of public health. We must be ready with our facts and figures when called upon to answer these questions, and they will be no less useful in private. No doubt, Mr. Farr's startling inference that the neglect of vaccination produces a mortality among children exactly equal to throwing two-thirds over London Bridge, has often been quoted with a beneficial effect on the prejudices of parents who would not have attended to more lengthened and persuasive disquisitions in favour of vaccination.

Some inconvenience will probably be felt from the comparisons unavoidably suggested between the success attending different methods of cure, different places, and different practitioners; some reproaches will be made; discredit will be attached, sometimes justly, sometimes unjustly, to individuals, and pain will be inflicted thereby; but in proportion to the faithfulness and fulness with which materials for commentary are furnished, will this unavoidable burden be adjusted—adjusted, as the Arab proverb has it, "on the march." To carry on the illustration, we would say, let each cheerfully take up his allotted share,

be it great or small, lest men have cause to exclaim—

“Alas for him that is gone, and has done no good deed.
The trumpet of march has sounded, and his burden is not yet bound on.”

ROYAL MEDICAL & CHIRURGICAL SOCIETY.

November 22, 1842.

DR. WILLIAMS IN THE CHAIR.

Account of a Case in which the Thigh was amputated during the Mesmeric State.
By W. TOPHAM, Esq. of the Middle Temple, and W. S. WARD, Esq. Surgeon.

JAMES WOMBELL, aged 42, a labouring man, of a calm and quiet temperament, had suffered, for a period of about five years, from a painful affection of the left knee. On the 21st day of June last, he was admitted into the District Hospital at Wellow, near Ollerton, Notts; no longer able to work, and suffering much pain. It was soon found that amputation of the leg, above the knee-joint, was inevitable; and it was eventually proposed that it should be performed, if possible, during mesmeric sleep.

In the first attempt to mesmerise him, which occupied me thirty-five minutes, the only effect produced was a closing of the eyelids, with that quivering appearance peculiar to mesmeric sleep; and, though awake and speaking, he could not raise them until after the lapse of a minute and a half.

My attempt the next day was more successful, and in twenty minutes he was asleep. From the 9th, I continued to mesmerise him every day, except the 18th, until the 21th of September, his susceptibility gradually increasing; so that, on the 23d, the sleep was produced in four minutes and a half. The duration of this sleep varied, continuing generally for half an hour; sometimes for an hour; and occasionally for an hour and a half. But, with two exceptions (attempts to converse with him), I invariably found him awakened, though without being startled, by the violent pain from his knee, which suddenly recurred at uncertain intervals.

After constantly mesmerising him for ten or twelve days, a great change was observed in his appearance. The hue of health returned; he became cheerful; felt much stronger; was easier both in mind and body; slept well; and recovered his appetite.

On the 22d of September he was first apprised of the necessity of an early amputation. The communication seemed almost

unexpected, and affected him considerably. I this day tried the experiment of mesmerising him against his will; proceeding by contact with the hands, charging him particularly to exert his mind to prevent my affecting him. During the process he occasionally glanced at those near him, moving his eyes as he felt inclined, and in twelve minutes and a half passed into mesmeric sleep.

On the morning of Saturday, the 1st of October, I again mesmerised Wombell, having done so the two previous days. This was done in the presence of Mr. William Squire Ward, of Wellow (the operator), and two other surgeons, in order that the previous mesmerism might tend, as I believed it would, to render his sleep deeper when again mesmerised for the operation; and also to satisfy them of the state in which he would be when that time arrived.

He slept an hour, and was roused by an attempt to converse with him. I then shewed them my power of affecting any one of his limbs, even when he was quite awake. At my request he extended his arms alternately. By making two or three passes over each, without any contact, I so trausfixed them that, from the shoulders to the tips of the fingers, they became as rigid and unyielding as bars of iron, not to be unbent, except by mechanical force powerful enough to injure the limbs; and yet instantly relaxing throughout, and dropping to his side, from the effect of my breath alone. His right leg was affected in the same degree; and relief from immediate pain was frequently afforded by making similar passes over the diseased one. Though the sensibility to pain was diminished in the limbs thus affected whilst awake, it was only during mesmeric sleep I found it totally gone.

At half-past one o'clock we proceeded to Wombell's room, to make the necessary arrangements. From the suffering inflicted by the slightest movement, it was found impossible, without needless torture, to place him upon a table. The low bed on which he then lay was therefore lifted upon a temporary platform. Ten minutes after being mesmerised, he was drawn, by means of the bed-clothes beneath him, towards the end of the bed. The movement, however, excited that pain which had so often aroused him before; and now it did so again. There was something quite excruciating in the suffering which the state of the knee produced; for I had seen him, whilst in mesmeric sleep, pricked to some little depth in other parts of the diseased limb, without being disturbed or conscious of it. To preclude the necessity of any further movement, his leg was now placed in the most convenient position which he could bear. Shortly afterwards

he declared that the pain had ceased; and I again mesmerised him, in four minutes. In a quarter of an hour, I informed Mr. Ward that he might commence the operation. I then brought two fingers of each hand gently in contact with Wombell's closed eyelids; and there kept them, still further to deepen the sleep. Mr. Ward, after one earnest look at the man, slowly plunged his knife into the centre of the outer side of the thigh, directly to the bone; and then made a clear incision, round the bone, to the opposite point, on the inside of the thigh. The stillness, at this moment, was something awful: the calm respiration of the sleeping man alone was heard; for all other seemed suspended. In making the second incision, the position of the leg was found more inconvenient than it had appeared to be; and the operator could not proceed with his former facility. Soon after the second incision, a moaning was heard from the patient, which continued, at intervals, until the conclusion. It gave me the idea of a troubled dream; for his sleep continued as profound as ever. The placid look of his countenance never changed for an instant; his whole frame rested, uncontrolled, in perfect stillness and repose; not a muscle or a nerve was seen to twitch. To the end of the operation, including the sawing of the bone, securing the arteries, and applying the bandages,—occupying a period of upwards of twenty minutes,—he lay like a statue. Soon after the limb was removed, his pulse becoming low from the loss of blood, some brandy and water was poured into his throat; which he swallowed unconsciously. As the last bandage was applied, I pointed out, to one of the surgeons and another gentleman present, that peculiar quivering of the closed eyelids already alluded to. Finally, when all was completed, and Wombell was about to be removed, his pulse being still found very low, some *sal volatile* and water was administered to him; it proved too strong and pungent, and he gradually and calmly awoke.

At first, he uttered no exclamation; and, for some moments, seemed lost and bewildered: but, after looking round, he exclaimed, "I bless the Lord to find it's all over!" He was then removed to another room; and following immediately, I asked him in the presence of those assembled, to describe all he felt or knew, after he was mesmerised. His reply was, "I never knew anything more; and never felt any pain at all: I once felt as if I heard a kind of crunching." I asked if that were painful? He replied, "No pain at all! I never had any; and knew nothing, till I was awakened by that strong stuff" (the *sal volatile*). The "crunching," no doubt, was the sawing of his own thigh-bone. He was left, easy and comfortable; and still found so, at nine

o'clock that night; about which hour, I again mesmerised him (in a minute and three quarters), and he slept an hour and a half. I may further add that, on the Monday following, the first dressing of his wound was in mesmeric sleep. Of this dressing, usually accompanied by much soreness and smarting, he felt nothing; slept long after it was completed; was ignorant of Mr. Ward's intention; and, after awakening, remained unconscious of its having been done.

[The preceding is by Mr. Topham; what follows is from the pen of Mr. Ward.]

The case to which the attention of the Society has been already called, was one of very extensive ulceration of the cartilages of the knee-joint, of four and a half years' standing, the consequence of neglected inflammation of the synovial membrane, produced by injury, which was treated by a quack in the first instance, but did not come under my own notice until about three years before his admission into the District Hospital, at Wellow; when, supposing ulceration to have commenced in the cartilages, I ordered absolute rest, and the usual treatment; which was only adhered to for ten days, when, in spite of every remonstrance on my part, he returned to his ordinary employment (an agricultural labourer), in his still crippled state.

He then fell into the hands of other practitioners, whose discipline was less rigid, and whose prognosis was more sanguine than mine. I frequently met him, and occasionally warned him of the eventual loss of his limb if he persisted in using it. His last fair prospect was a promised cure by cupping; but this having produced no relief, he applied for admission into the hospital. At this time the disease had far advanced; the slightest motion of the joint was attended by the most excruciating agony; his nights were almost wholly sleepless, in consequence of the painful startings of the limb; his pulse weak and rapid; his face constantly marked with a hectic flush; his tongue foul, and appetite gone. He was now confined to his bed, but could not bear a horizontal position. The joint was supported by a light splint; poultices, fomentations, &c. were applied; attention paid to his general health; opiates, quinine, wine, &c., prescribed to get him into a fit state for the operation (which I deemed inevitable), without any apparent benefit; but, on hearing that Mr. Topham was coming into the neighbourhood, I determined to request him to try the effects of mesmerism upon him, with a view not only of tranquillising the system prior to the operation, but, if possible, to procure such a degree of insensibility to pain as to render the man unconscious of the operation

itself; having long desired to see this accomplished, as the "summum bonum" of mesmerism.

I was, however, obliged to leave home from indisposition at this period, but daily received reports of the progress made upon my patient; and on my return, on the 27th of September—about three weeks after the commencement of the mesmerism—I was as much astonished as I was delighted, to observe the improved condition of the man. He had, now, much more the hue of health; his nights were more quiet and tranquil; his appetite had returned; and, in fact, such was his state, that had I not known the previous history of the case, much doubt must have arisen, in my mind, as to the propriety of immediately amputating the limb. It is true, there was still the pain, on the slightest movement of the joint; and still some of the same painful startings at night; but he no longer appeared to be suffering in his general health, which, on the contrary, was greatly improved: nevertheless, I felt assured, notwithstanding all this in his favour, that there was too much disease to admit of a final recovery.

As I had quite determined upon not attempting to remove the limb while the patient was under mesmeric influence, unless I was convinced of its safety, and had opportunities of seeing him in that state; and, moreover, not without the man's own full concurrence; on the 29th, I requested Mr. Topham to mesmerise him; when I was delighted to find his susceptibility so great. When asleep (if I may use the term), his breathing was unaltered; his pulse tranquil, and about 80; his waking was slow and gradual, and without the least start; and I found he was insensible to the prick of a pin.

Under such circumstances I saw no grounds for fear or hesitation; and having obtained the patient's consent, or rather at his own urgent request, I fixed the following Saturday, 1st of October, for the performance of the operation.

The patient (as has been already stated) was lifted, with his bed, upon a platform; and, although he was considerably excited by hearing the cries of another patient, upon whom I had been performing a tedious and painful operation in an adjoining room, he was soon put into mesmeric sleep; but as I wished him to be placed in the usual position, with the limbs extended over the end of the bed, an attempt was made to draw him down with the bed-clothes; but this occasioned so much pain as to awake him. I was now somewhat embarrassed, as his position on the bed, with his extremity lying in close contact with it, was so very unfavourable to the operator; but, having proceeded thus far, I was unwilling to mar the first attempt

at lessening the horror and pain of a capital operation; although, I must confess, I was by no means sanguine of success. The patient was again put to sleep; previously to which a surgeon present raised the limb about two inches from the mattress, by resting the heel upon his shoulder and supporting the joint with his hand; promising also, if the man should awake, instantly to draw him down, so as to allow the leg to extend beyond the edge of the bed.

In a few minutes, Mr. Topham said he was quite ready; when, having adjusted the tourniquet (the very unfavourable position of the patient precluding the possibility of otherwise compressing the artery), I proceeded to perform the operation, as has been described. Having made the anterior flap, without the slightest expression of consciousness on the part of the patient, I was under the necessity of completing the posterior one, in three stages. First, by dividing a portion of the flap on the inside; then a similar portion on the outside. This proceeding (which of course was far more tedious and painful than the ordinary one) was rendered necessary, to enable me to pass the knife through, under the bone, and thus complete the whole; as I could not sufficiently depress the handle to do so, without the two lateral cuts.

Beyond what has been already so well described by Mr. Topham, I need only add, that the extreme quivering or rapid action of the divided muscular fibres was less than usual; nor was there so much contraction of the muscles themselves: I must also notice, that, two or three times, I touched the divided end of the sciatic nerve, without any increase of the low moaning described by Mr. Topham; and which, to all present, gave the impression of a disturbed dream.

The patient is doing remarkably well, and sat up on Sunday last to eat his dinner—just three weeks from the operation; and he has not had a single bad symptom: none, even, of the nervous excitement so frequently observed in patients who have undergone painful operations, and who have suffered much previous anxiety in making up their minds.

On dissection of the joint, the appearances fully verified my diagnosis. The cartilages of the tibia, femur, and patella, had been entirely absorbed, except a much-thinned layer, partly covering the patella. There was deep carious ulceration of the exposed ends of the bones; and especially on the inner condyle of the femur, which had wholly lost its rounded shape. Some coagulated lymph was effused upon the surface of the synovial membrane, in several places; and the joint contained a certain quantity of dark-coloured pus.

After the reading of the preceding case (our account of which is taken from the report published by the parties themselves), a considerable number of the members expressed their opinions; but we can only make room for what was said by one or two.

Mr. Alcock argued that the circumstance of no pain being expressed, by no means proved that none was felt, and mentioned the case of a patient of his own, who smoked his pipe, with the most perfect composure, during the whole time of his performing a capital operation upon him.

Sir Benjamin Brodie alluded to the case of the sleeping boy, recorded in the Philosophical Transactions by Dr. Oliver, and who suffered pins to be thrust under his fingernails, and various other kinds of torture to be inflicted, without giving the slightest sign of pain. He also mentioned the case of a distinguished physician of the present day, on whom he had operated for strangulated hernia, and who had shewed such perfect composure as to ask questions about the various steps of the operation, handling the instruments, and conversing with perfect tranquillity while the operation was being performed; the only indication of suffering having occurred when Sir Benjamin touched a nerve which was exposed. After alluding to some analogous cases, he expressed his approbation of the report of the French Academy, to the effect that animal magnetism was a complete delusion, and added his concurrence on what had been said by one of the former speakers—namely, that the paper ought not to have been admitted by the Council.

Mr. Coulson, Dr. Moore, Dr. Blake, Mr. Bransby Cooper, Mr. Liston, Dr. Marshall Hall, and some other gentlemen, expressed themselves as disbelievers in mesmerism.

Dr. Mayo expressed his opinion that there existed something more than mere indifference to pain in what was called mesmeric phenomena, and mentioned that he had thrust a pin into the arms of one of the girls O'Key, without her shewing any sign of pain, although she could not possibly have known beforehand what he was about to do.

Dr. Elliotson spoke rather fully upon the subject of mesmerism, and explained his own opinions in its favour, denying the applicability of Sir Benjamin Brodie's remarks. He argued that cases such as he adduced were only instances of insensibility to pain, and that such were not uncommon. In illustration of his meaning he referred to the case of a female, which occurred in the Royal Infirmary at Edinburgh in 1830, the skin of whose hands was lacerated and torn while she was in a state of insensibility, and without her feeling it in the least; but he did not regard such instances as bearing upon the question. He expressed his dissent from the report of

the French Academicians, and, on sitting down, declared his determination to maintain his opinion, and pursue his researches on the subject of mesmerism, regardless of the ridicule which might be heaped upon him for doing so.

We have received a letter from one of the gentlemen present, and which we subjoin.

To the Editor of the Medical Gazette.

SIR,

I WAS present at the meeting of the Royal Medical and Chirurgical Society, on last Tuesday evening, and was one of those who regretted that any fellow of the society should have been so good-natured to the authors of the very silly paper on Mesmerism, as to comply with their wishes, by presenting such a paper to be read at one of our meetings.

The unfortunate patient whose case was recorded, who *moaned during the operation, and heard a crunching during the sawing of the bone*, evidently felt quite enough; and gave as much sign of feeling it, as many patients do under similar circumstances. And it requires no very deep knowledge of human nature, to imagine various motives which might induce him to express himself as he did afterwards.

It is rather remarkable that it should have occurred to no one present to mention the case of a woman whose breast was amputated, some years ago, in Paris, by M. Cloquet, while she was (as it was supposed) in a state of mesmeric stupor. This woman was believed to have been insensible to pain during the operation; and was a better actor than the man mesmerised by Mr. Topham, as she did not even moan. Some considerable time afterwards, however, while dying of an internal complaint in another hospital, she confessed to the nurse that the whole had been a cheat; that she had experienced pain during the operation, like other persons, but had sufficient command over herself not to shew it.—I am, sir,

Your obedient servant,

F.R.M.C.S.

CLINICAL LECTURES,

Delivered at St. Thomas's Hospital,

By SAMUEL SOLLY, Esq., F.R.S.

Assistant-Surgeon, and Lecturer on Clinical Surgery, at St. Thomas's School.

LECTURE II.

On Diseases of the Spine.

IN my last clinical lecture I dwelt much on the physiology of the spine as a centre of support, showing upon what structures its strength depended, and how deformity should be prevented, and how its progress

should be arrested, when your advice is sought in the early stage of the disease. Your attention shall be directed to the treatment of more confirmed cases of distortion, when we have some patients in the hospital to illustrate my observations. The spinal column is interesting to the surgeon not merely as a bond of union between the different portions of the skeleton, held together and supported by numerous muscles and ligaments, but from the fact that it contains within its tube that important centre of the nervous system, the spinal chord. This relation of the column to the cerebro-spinal axis should always be borne in mind when you are called upon to treat any of the diseases to which it is liable, but it is especially important in connection with the spinal diseases of which the following case is an illustration.

William Dickerson, æt. 21, farmer's labourer, from Cambridgeshire, was admitted into St. Thomas's Hospital, Aug. 22, 1842, with posterior angular curvature of the spine at the ninth dorsal vertebra.

States, that until six months ago he had no signs of disease, or curvature, whatever. He first noticed a sharp aching pain across the hips and loins, increased by coughing and percussion; at this time he was exposed to wet and cold at his work, though not more than farming labourers are generally; he never had rheumatism, but he has cough at the present time; he does not remember having strained or hurt himself in any way.

August 2d, 1842.—The spine presents no lateral deviation, but at the ninth dorsal vertebra there is a considerable projection posteriorly. He suffers acutely if this point is tapped with the hand.

There is no paralysis of the legs, but they are subject to occasional twitches.

Some cough, attended with bronchial expectoration.

General appearance tolerably healthy; appetite good.

Hydr. c. Creta, gr. ij.; Conii. gr. iij.
o. n.; Moxa lumbis.

Sept. 15th.—C. Cruentæ, ad 3vj.

21st.—Linctus pro tussi.

22d.—Moxa Lumbis, Hirudines xij. lumbis.

26th.—C. Cruent. Lumbis ad 3vij; Moxa Rep.

Nov. 1st.—C. Cruent. ad 3vij.

He is now free from pain in his back; he can bear it to be tapped without suffering; but if he coughs or sneezes he has a shooting pain down from the loins. He still, at times, has a little numbness down the legs, but not so much as he had; his countenance and general health are good.

You will immediately perceive that this

case illustrates one of the grand divisions of spinal diseases into which I stated they were usually divided: viz., that deformity which is occasioned by actual disease of the bones of the vertebræ. We must now consider how this disease commences, and whether it is similar to other diseases to which our frames are subject.

Bone is liable to be affected with the same kind of diseases as the soft parts; inflammation and its consequences, ulceration, supuration, gangrene, &c., though the difference of texture modifies the progress of the disease, and appearance which it presents. Different terms have been employed in designating its diseases: thus, ulceration is called caries, and gangrene necrosis, &c.

When the ulcerative process attacks a bone, it is not easily arrested, and a considerable portion of bone is usually destroyed before the ulcer heals.

The texture of the bone which has been removed by this process is never entirely filled up, and the vacant space remains. Supposing, then, caries to have attacked the body of one or more vertebræ, the consequence will be that a considerable gap will be formed in the anterior portion of the column, depriving it of its firmness and solidity.

If you look at this beautiful preparation of caries of the spine, you will immediately perceive the cause of angular curvature. The bodies of the vertebræ have ulcerated, and thus allowed those above and below to approximate anteriorly; the spinous processes are consequently separated, and form the angular projection which you see here, and which can always be detected during life, as in the case just related.

In regard to your diagnosis of caries of the vertebra in such cases as the present you cannot easily err, for here the disease had extended so far as to produce the angular curvature I have described. But it sometimes happens that the first indication of caries of the spine is partial paralysis of some of the muscles of the extremities, unaccompanied with any spinal deformity. In such cases it is extremely important to detect the cause of such paralysis—whether it is dependent on lesion of the spinal cord or brain, and if of the cord, of what portion. Generally speaking, if you carefully examine the spine from the cranium to the sacrum, tapping gently the spinous process of each vertebra, you will discover the seat of the disease. But this plan does sometimes fail. Mr. Copeland recommends the application of a sponge wrung out of hot water, and he relates a case of caries of the spine which he detected in this way when every other had failed. Sir B. Brodie observes, that there are cases “in which there is no pain in the spine whatever from the first access of the

disease to its termination," and others, in which the disease has been supposed to be cured, the patient not having experienced any pain for two or three years, but in whom, after death, the bodies of the vertebrae were found to be still in a state of caries, and an abscess, containing not less than half a pint of matter, connected with them.

Supposing, then, that you have ascertained the existence of caries of the spine, even though it be prior to the existence of deformity, it is a matter of no little importance to you to learn whether the disease commences in the osseous or the ligamentous tissues of the column. It is not often that we have the opportunity of examining these cases in the very early stages—before, in fact, the deformity has commenced—which too frequently is the first intimation we receive of the existence of any malady at all. In this preparation you have the opportunity of observing one form of the disease in its very early stage. The anterior ligament of the spine exhibits marks of inflammation; it is separated from the bone, and fibrinous matter deposited between them: this inflammatory action is the precursor of ulceration of the vertebra; and thus, in some instances, does the disease commence in the ligamentous, not the osseous tissue.

The researches of Sir B. Brodie shew that the ulcerative process does not invariably commence in the bone, but occasionally in the fibrous intervertebral cartilage. "I have," says this author, "in some instances, found the intervertebral cartilages in a state of ulceration, while the bones were either in a perfectly healthy state, or merely affected with chronic inflammation, without having lost their natural texture and hardness; while in others it has been manifest that the original disease was the true scrofulous disease of bones."

When the disease commences in the cartilage it extends to the bone by simple caries or ulceration, and such cases are much more likely to terminate favourably, that is, with ankylosis, than the scrofulous disease of the bone.

It is therefore important, if possible, to distinguish them in the early stage, both in regard to your treatment and your prognosis. It would be incorrect to assert that this distinction can always be made; but I think the following points may assist you in forming your opinion. You do not meet with decided scrofulous disease of the bodies of the vertebrae, without tolerably decided indications of a scrofulous diathesis, as exhibited by the general appearance of the patient, and symptoms of the disease in other organs; whereas direct injury, such as a forcible twist of the spine, occurring in a person of good general health, without any strumous taint, though deficient in general

power, may lead to inflammation of the anterior and posterior ligaments of the spine, or the intervertebral substance, which, if unchecked, goes on to ulceration, not merely of the fibro-cartilages, but of the bones themselves. Such serious consequences do not often follow strains in strong healthy persons, but only in individuals of lax muscular fibre.

This severe injury of the ligamentous connections of the vertebral column takes place in consequence of the spinal muscles, whose office I described in my former lecture, under the title of intelligent ligaments, not performing their duties efficiently. From deficient muscular power a greater strain is thrown upon the spinal ligaments than they can bear. You must not, then, confound inefficient muscular action, arising from general want of power, with the strumous or scrofulous diathesis. The following case, which I saw at home, on Thursday last, the 3d instant, illustrates the kind of injury which is very likely to lead to disease of the intervertebral substance if it is not checked.

Rebecca Warland, æt. 42, married woman, wife of a brewer, has always lived well, but not to excess; appearance rather delicate, but not unhealthy; has had seven children, and five living, the youngest seventeen months old; she nursed until it was five months old. Applied to me at home on account of a pain in her back and loins, which is constant, and a most distressing sensation on stooping. She attributes her present symptoms to a fall, exactly a week ago, in coming down stairs, when she slipped, and falling partly over the bannisters, twisted her spine. She suffered most acute pain at the time, which has never left her altogether since, but has rather increased.

She feels a twitching of the legs while walking, and a catching in her back, which she says causes her to draw up her right leg. The pain she experiences in her back is principally on the right side. The spine is throughout tender to the touch; but she suffers acutely if it is tapped over the fourth lumbar vertebra, which was the exact seat of the pain at the time of the accident. As she is falling off to sleep at night, she is awoke with twitchings and catchings of the legs and back part of the head, and when thus roused, she is not collected immediately on awaking, as she always was previous to the accident, but is confused and bewildered. In the day-time, if she stoops her head she feels giddy and loses her memory. Tongue white, and slightly furred; pulse 68, soft; bowels as usual, rather confined. Ordered—

Cal. c. Rhei, gr. xv.; Cuc. Cruent. Lum-
bis ad ʒviii.

It is evident from the serious effect produced upon the nervous system, which has

even extended from the spinal cord up to the brain, how severe a twist the spinal column itself must have received. There must have been a temporary and partial displacement, though probably only momentary, or the cord, which is so beautifully protected, could not have been so much injured. The cause appears slight in comparison with the lesion produced; and we can only account for it on the principle before adverted to, namely that the muscles, as supporters of the columns, did not faithfully perform their duty, either from want of sufficient power, or from their being taken unawares before they had time to contract efficiently.

I think it right to employ the cupping-glasses in these cases in the first instance, as being more efficient in the acute stage of inflammation, and less painful than the moxa. This patient has been much relieved by these measures, and the symptoms of injury to the cord very much alleviated. I cannot impress too strongly on your mind the necessity of treating such cases actively at first, and watching them carefully afterwards.

I have two cases in my mind's eye at this moment, in which partial paralysis followed from what I must again designate as sprain of the spine. The one occurred to a steward on board a vessel, as he was lifting some very heavy trunks belonging to a passenger; the other to a carpenter. The first case was in private; but the subject of the latter was a patient in Henry's Ward, and as his case is short I will read it to you.

Henry Lambton, æt. 29, married man, three children, by trade a carpenter; states that he has always had good health; appearance not strumous; was admitted into Henry's ward, January 25th, 1842, with partial paraplegia.

He is scarcely able to walk, catching his toes against the ground, and dragging his limbs as he supported himself with a stick; without which, indeed, he could not stand. His legs and thighs feel numb; the left extremity is rather the worst, both in respect to sensation and motion. He has not now, nor ever had, any pain in his head. His general health is good.

His account is, that one year previous to his admission into the hospital, he strained his loins lifting a very heavy weight. He felt at the time a considerable pain in the lower part of the back, from which he has never been entirely free since. He had medical advice at the time, and was cupped and blistered, but he gradually lost the use of both his limbs in about four months from the time of the accident.

Jan. 27th.—I ordered him Hydr. c. creta, gr. ij. om. nocte. Two moxas, one on each side of the lumbar portion of the spine, where he experienced most pain on pres-

sure. Strict confinement to the recumbent posture.

March 9th.—Much better, both as regards sensation and motion. Mouth very tender. To take the Hydr. c. creta, gr. j. instead of ij. The issues discharge very little. Ordered two fresh ones.

19th.—Can now get out of bed without assistance, which he could not do when he came in. The numbness of the extremities is nearly gone, and he can walk without any dragging of his limbs. He does not walk firmly, like a strong man, but he improves after he has been up some time.

Soon after the date of the last report, he got impatient of the confinement, and went home. He returned again in about two months, much worse; but as he refused to keep the recumbent posture, he was dismissed.

In this case there was no irregularity of the spinous processes, or indication of disease of the osseous tissue. That a very decided change had taken place in the vertebral canal was very evident from the paralysis, caused in all probability by pressure on the cord from fibrinous deposit, the result of chronic inflammatory action of the intervertebral substance, extending to the ligaments. The rapid improvement under the influence of mercury and the counter-irritation of the moxa, demonstrates that the cord could not have been damaged by the accident, but only compressed by some matter which afterwards became absorbed. I have no doubt that the termination of this case, in consequence of the man's obstinacy, will be caries of the spine, angular curvature, and permanent paraplegia.

When disease of the bodies of the vertebræ is not the consequence of simple inflammatory action, by whatever cause such action may be set up, it is occasioned by scrofulous disease. This beautiful preparation, exhibiting its existence in the sacrum and last lumbar vertebra, taken from a man who died in the hospital during the summer, was produced by a direct blow on the part. He fell on board a ship from the main-top upon the deck—a height of about thirty feet—striking the sacrum. The accident occurred just three years before his death, during which time he frequently partially recovered: the immediate cause of his death was phthisis. You have frequently during the present season seen the effects, in different parts of the frame, of scrofula—this dreadful scourge of the human race: sometimes attacking one joint, sometimes another; sometimes arising spontaneously in the system, and sometimes consequent upon severe local injury.

Ulceration of the soft parts is always accompanied by suppuration; but not so caries of the bone. It would, however, ap-

pear that suppuration more frequently follows the caries which commences primarily in the bodies of the vertebræ than that which commences in the ligamentous tissue. The extent to which caries will go on in the latter case, without the formation of matter, is quite extraordinary. Sir Benjamin Brodie says: "I have known as many as three bodies of vertebræ destroyed, and the disease to have lasted many years, without matter having been formed; a fortunate circumstance for the patient, as the chance for his recovery is much greater under these than it would have been under opposite circumstances. It does not follow that because no abscess appears that therefore none exists, for they will lie dormant sometimes for years." The same surgeon relates two cases, in one of which there was disease of the loins, and an abscess presented itself in the groin at the end of eight years; and in another, in which the disease was situated in the dorsal vertebra, the interval was sixteen years.

The course which the pus takes towards the skin, after its secretion, varies very considerably. Sometimes it presents on the sides of the vertebræ posteriorly, as in the case from which this cast was taken. The subject of it you saw on Wednesday among the out-patients. Sometimes, I think most frequently, it follows the course of the psoas and iliacus muscles towards the groin, when it presents itself as a firm elastic swelling, not unlike an adipose tumor; for the fluctuation is very indistinct, in consequence of the quantity of loose adipose tissue in this situation, and the firm aponeurotic covering it receives from the iliac fascia.

As these remarks have led me to the subject of psoas abscesses, it may be well to observe, that, you must not consider these abscesses as invariably the result of diseased vertebræ. We had a case in William's ward a few weeks ago, in which there was an extensive collection of matter in the iliac fossa produced by inflammation of the lumbar and iliac fascia, excited by cold and wet. As I have no doubt we shall have similar cases again in the hospital, I shall not now detain you on this branch of the subject.

In caries of the cervical portion of the spine, when pus is secreted, it will find its way in various directions between the muscles of the neck. It has been known to burst into the pharynx. Sir Benjamin Brodie states that he has seen one case in which it burst into the theca vertebralis, and the whole cord, from its origin to its termination, was bathed in pus.

The most serious cases of caries of the cervical vertebræ are those in which the odontoid process of the second vertebra has been the seat of the ulceration. There are

two or three cases on record in which the consequence was the sudden giving way of that process, which, allowing the head to fall forward, the medulla oblongata, or respiratory centre, was crushed, and instant death followed. Sometimes, fortunately for the patient, the inflammatory action leads to a more favourable result in the ankylosis of the two bones, as you see in this preparation.

Prognosis.—It is extremely necessary that you should be very cautious in your prognosis regarding the termination of all cases of caries. Your best guide, in regard to prognosis, in those cases in which there has been angular curvature, is to ascertain whether ankylosis has taken place or not; for if true angular curvature has once existed, it must have been caused by the absorption of the bodies of one or more of the vertebræ; and the substitution for such deficiency, experience teaches, is the soldering together, by bony deposit, the healthy bones above and below the seat of the original disease. This, of course, produces unnatural, though, under the circumstances, providential rigidity of a portion of the column. Since the commencement of this session you have seen two or three cases of ankylosed angular curvature of the spine: they have not been retained in the house, because surgery could not rectify the existing deformity, which our knowledge of the pathology of these cases teaches us it would be madness to attempt.

You may, therefore, as a general rule, feel satisfied that you have effected a cure if the patient is completely relieved of the pain in his back, and at the same time that the posterior projection is less, the rigidity of the column in that situation is unnatural and complete.

With regard to the length of time required to effect ankylosis, it is extremely difficult to state it. One of our best authorities considers that it is seldom effected under six months, and that most frequently it is necessary to retain your patient in the recumbent posture a year, or a year and a half.

When caries occurs in the lumbar vertebræ, the disease will often go on to the formation of abscess without any deformity of the spine, for the bodies of the lumbar vertebræ are so wide and large in every direction, that the absorption is seldom sufficient to cause them to fall forwards.

You will remember a man in William's ward, who had been a patient in the house for nearly twelve months, with lumbar abscess, which burst posteriorly. Now there was no deformity of the spine in this case, but there was great tenderness over the spinous processes of the third and fourth lumbar vertebræ; and I am inclined to

regard it as a case of caries of these vertebrae. I am supported in such a supposition from the extreme rarity of lumbar abscess independent of caries of the spine. From the greater length of the spinous processes in the dorsal region, and the comparatively small size of their bodies, you will readily understand that a much smaller amount of mischief to the bodies would necessarily produce considerable angular curvature.

Treatment.—In all cases of angular curvature entire rest is absolutely necessary; and this must be continued for some time; seldom less than four or five months, and often for a year, or a year and a half. The exact position in bed must vary with circumstances: as a general rule, that which is easiest to the patient is the best; and the lateral position will frequently be found so, taking care to support the back with pillows that are fixed so that they cannot be pushed away. In other cases it has been found desirable to place the patient on his face; and there is a very good convex bed for that purpose contrived, over which the patient lies.

In determining the position in which you place the patient, you must always remember that you must not attempt to correct the deformity; that the maintenance of the curve, and not its obliteration, is the thing to be sought for.

You must be guided in your choice of medicines by the fact of whether the disease appears to be strictly the consequence of a scrofulous diathesis, or of local inquiry—whether it is accompanied with paralysis or not. If you have a scrofulous diathesis to contend with, you must avoid mercury, and give the various forms of iodine in combination with sarsaparilla, and when these disagree with the stomach vary them with quinine, steel, &c. In some cases, but they are rare, there is sufficient indication of inflammatory action following local injury to justify you in the use of mercury in small doses. In cases of paralysis you cannot often get on without it, but your doses must be small; such as a grain or two at the most of hydrar. c. creta at bed-time. This mineral you give with the view of promoting absorption of that which is pressing on the cord, and producing paralysis. The following case will illustrate the efficacy of these measures, and teach you never to be discouraged in your treatment, though the recovery may proceed extremely slow, and sometimes even appear to stand still for a period altogether. When you have pushed the use of mercury even in these small doses as far as you consider consistent with the general strength of the patient, which must of course always be strictly watched, you may then prescribe iodine in doses commencing with half a grain, and going up to two grains,

to promote the further action of the absorbents. One word upon local treatment, and then I will read the case I have adverted to. The best counter-irritant is the oldest, that which was first recommended by Mr. Pott, I mean the moxa. You should not make them very large; about the size of a shilling is the best: never make more than one at a time: even if you intend, and it is generally necessary, to have two, do not keep them open more than three weeks or a month; heal them, and make fresh ones in the neighbourhood. In very young children, as in this case before you, I find the tincture of iodine extremely efficacious, and less exhausting than the moxa. This child, Henry Warden, was a year and a half old when he was brought to me about three months ago: he then had angular curvature about the sixth dorsal vertebra, and his general appearance was so wretched, from emaciation and pallor, that I never anticipated any favourable results. But you now see the child a healthy, ruddy, plump little fellow. The treatment has been simple—attention to the bowels, the administration of the tinctura cinchona internally, and the tincture of iodine to the back.

Rebecca Young, æt. 21, fair complexion, blue eyes, rather strumous appearance, was admitted into St. Thomas's Hospital in a state of complete paraplegia. She had neither feeling or motion below the sixth dorsal vertebra, which projects posteriorly, and is very tender on pressure. Parents healthy; live at Felstead in Essex; believes it to be a damp situation in winter. She cannot account for the disease; has always lived well, never carried heavy weights, or has she been in the habit of carrying children. She thinks that it must have been coming on for about five years, as she constantly suffered from pain in her back; on one occasion she felt a "*crick*" in her back, and from that time got gradually worse, and she was quite paralysed about six weeks previous to her admission, which took place on the 23d of March, 1841.

When I saw her on the 26th, I ordered her a purge of cal. c. jalap; which brought away some solid and scybalous faeces. This required to be repeated frequently, and had the effect of removing enormous masses of feculent matter.

As soon as the bowels were thoroughly evacuated, I ordered her a moxa on each side of the sixth dorsal vertebra, the situation of the angular curvature. On the 19th of April, I ordered two grains of iodine, to be taken three times, with the hope of promoting absorption of the deposit, which by its pressure was producing the paralysis. I was afraid that her constitutional powers would not be able to bear the effects of mercury, which was contra-indicated by her scrofulous diathesis. On the 22d, I increased it to

three grains; May the 3d, to three and a half; and on the 11th of June, to four grains. During this time there were gradual symptoms of improvement, which encouraged me to persevere. And it was interesting to observe the way in which the healthy state was gradually arrived at: first there were slight crampy feelings in the limbs; next twitching and catching; and afterwards decided convulsive involuntary movements.

On the 21st June another moxa was applied a little lower down the spine. On the 26th I ordered her meat daily, instead of the usual house allowance, which is meat four times a week.

On the 30th another moxa: during this period the bowels continued very sluggish, and she required repeated doses of castor oil.

Sept. 30th.—Some slight power of raising her legs, but still very imperfect, and scarcely any improvement in sensation.

Mr. Tyrrell now thought it a good case for trying strychnine, and ordered her the 12th of a grain three times a day: thus, Strich-nine, gr. i.; Tinct. Aurant. ʒiiss.; sumat. cochl. min. j. ter die.

Nov. 1st.—This was increased to the 8th of a grain: under this medicine she decidedly progressed, and recovered some sensation: at first she experienced shooting pains down the leg, like what is vulgarly called pins and needles; after a little while she suffered more decided pains, and as these subsided she began to feel the touch of the finger bluntly at first, but more acutely afterwards.

Dec. 6th.—The strychnine now began to act too powerfully, producing general convulsive twitching, and it was therefore abandoned.

Feb. 24th, 1842.—As she seemed a good deal depressed, and her general power rather failing, I ordered porter one pint, and a chop, daily. Her position in bed for the first three or four months was on her face, with very short intervals of change.

March 14th.—I ordered her the mixture, iodine and gentian, continuing the meat, and porter. This medicine was continued until the beginning of May, when her general health having much improved, but not the condition of the nervous system, on the 26th of this month I ordered her Hydr. c. Creta, gr. i. om. nocte. From this time her progress, though slow, was very decided, and on the 2d of August she was presented, and left the hospital able to walk about with the assistance of a stick, with perfect sensation and power of controlling and directing the motion of her limbs. Her spinal column presents the appearance presented in the diagram; namely considerable posterior angular curvature at about the 8th dorsal vertebra, the effect of which on the figure is almost counteracted by a full bowing forwards of the lumbar region of the spine;

so that when she is standing, there is not any very marked deformity, and she maintains the erect position very well: her stature is shortened, but not bent forwards.

Remarks.—This case is interesting in many points: first, as regards the nervous system, it shews that though the scrofulous disease of the bodies of the vertebra, which caused an angular curvature that must ever remain, had so far encroached on the spinal canal as to press upon the spinal cord and obliterate its functions entirely for almost two months, that, nevertheless, it still retained its integrity, and recovered its function, when that pressure was removed. It was to promote this result that I ordered the iodine; which I preferred to mercury in the first instance, for reasons stated above. The moxa, I believe, had the effect of assisting this result.

It would also appear that the strychnine had some effect in restoring the natural functions of the posterior column, more especially after the pressure had been removed, but still it did not effect a complete cure. This I believe was ultimately accomplished through the agency of minute doses of the Hydr. c. Creta, continued for some time, which I then no longer feared to administer, as the disease of the bodies of the vertebrae was evidently arrested, and her general health very much improved.

You will now, I trust, thoroughly understand the pathology of the case of William Dickerson, and the principles of treatment which have been pursued. So far they have been successful, but anchylosis has not yet taken place, and our great difficulty will be to persuade him to keep the recumbent posture, now that he is free from pain, until it is accomplished.

METHOD OF DETECTING ADULTERATION IN THE EXPRESSED OILS OF COMMERCE.

To M. Heidenreich, pharmacien of Strasbourg, it was proposed to decide, whether the adulteration of different oils could be ascertained by definite chemical tests. It then became an object of research with him to find out some method of proceeding which would enable those who are not *au fait* at chymical experiments to detect these adulterations, by furnishing some accurate characteristic test which might be employed without much trouble, or requiring nicety of manipulation; and he therefore directed his attention to the three following series of experiments:—

1. *By observing the peculiar odour evolved by each Oil when gently heated.*

For this purpose he suggests, that a few

drops only of the oil under examination be exposed for some moments, in a small porcelain basin, to the flame of a spirit-lamp. The odour which is evolved immediately suggests that of the plant or animal from which it has been obtained: and this characteristic is valuable if observed in conjunction with the genuine oil, and furnishes accurate indications of the presence of linseed and train oils in any mixture.

2. *By the action of concentrated Sulphuric Acid on Oils.*

By mixing a small quantity of concentrated sulphuric acid with some oil, (in the proportion of about 1 or 2 parts of the former to 100 parts of oil,) very intense action immediately ensues, the temperature increases, and the mixture becomes coloured.

A plate of white glass being laid over a sheet of white paper, if we place on the former from 10 to fifteen drops of oil, and then add thereto one small drop of sulphuric acid of $66^{\circ} = 1.632$, sp. gr., a colour will soon be produced without stirring, differing according to the oil employed.

In the case of rape oil, there will gradually form at a certain distance from the drop of sulphuric acid, a greenish-blue ring; whilst towards the centre, where the action is more violent, light yellow-brown streaks may be observed.

The expressed oil of black mustard-seed likewise assumes a tinge of bluish-green; but the quantity of oil must, in this case, be increased to 25 or 30 drops.

In train oil, obtained from the whale or stock-fish, a very peculiar motion occurs, commencing at the centre and extending to the outside, whilst a red colour is observed, which grows more and more vivid, until after ten or fifteen minutes, when the margin assumes a violet tinge, which in the course of about two hours becomes uniform throughout the mixture.

Olive oil instantly assumes a pale yellow colour, which afterwards becomes yellowish-green.

In poppy oil, and that obtained from sweet almonds, the colour approaches to that of the greenfinch, and afterwards becomes of a dead yellow hue.

In linseed oil a drop of acid produces a beautiful dark brownish red web, which is gradually converted into a brownish black.

Tallow oil (called by the trade oleic acid) is rendered brown.

If, instead of allowing the sulphuric acid to act on the oil undisturbed, both fluids be stirred up with a glass rod after adding the drop of sulphuric acid, the phenomena mentioned appear in different order.

Rape oil then assumes a uniform brown colour, without a tinge of red; and if, instead of one drop of acid, five or six are added, and mixed with the oil, the whole

mass becomes of a dead brown-red colour, not very intense, remaining green only on the edges.

By doubling or tripling the expressed oil of black mustard seed, the quantity tested gives rise to similar action, with the exception that the colour is somewhat less bright.

Train oil instantly assumes, when stirred, a lively brown-red colour, which finally passes into a dark brown and violet, without a hue of green. If mixed with five or six drops of acid, the colour is much more intense, and the violet colour sooner appears.

Seal oil assumes a yellowish-grey colour. If, however, thirty drops of oil are taken instead of ten, a colour slightly approaching to green-blue also appears, so that one drop more changes it into grey. On the addition of five or six drops of acid it receives a lively orange-yellow tint.

The oils from the olive, poppy, and sweet almonds, all assume a yellow colour, more or less dingy or grey; and by the addition of more acid the action is rendered far more violent.

If linseed oil is stirred with the rod, as before mentioned, a brownish black lump forms, and, by adding five or six drops of acid, the whole forms a resinous, black, and persistent mass. It is true that all other oils likewise become plastic by the addition of greater or smaller quantity of acid; none, however, to a similar degree, and with a colour so black, as linseed oil. The oil obtained from tallow assumes a dark dirty brown colour, which does not vary in tint by the addition of more acid.

In trade it seldom occurs that a better oil is mixed with an inferior. Oil of almonds, olives, and codfish oil, will, therefore, never be used for adulterating rape oil, but probably train, or perhaps linseed oil, and sometimes poppy oil. If we are led, therefore, by the odour to infer an adulteration—for instance, by train oil, which occurs most frequently—it is only necessary to place from ten to fifteen drops of rape oil, the purity of which is undoubted, together with as much train oil, and an equal quantity of the oil whose purity is suspected, and to add to each of them a small drop of sulphuric acid. From the colour produced an inference may be drawn as to the purity of the oil, and by the difference of tinges from the vivid red of the train oil, and the bluish green of rape oil, the extent of adulteration may be ascertained. In this manner I detected adulterations made with half the quantity of an inferior oil; and the areometer bore further testimony to the precision of my observations.

In undertaking an experiment, the commencement of the reaction must be accurately observed, with the several oils placed beside each other; for the colours, after a quarter of an hour has elapsed, are

less distinct, and the mixture should, for the purpose of attaining to greater certainty in the first experiment, be left undisturbed; in a second stirred with a glass rod. It is likewise necessary to avoid employing more than one drop of the acid to ten drops of oil, since otherwise the reaction which ensues is too violent.

If the presence of linseed oil be suspected in train oil, this will be discovered, if the mass is left undisturbed, by a rather intense brownish red colour; if disturbed, by a brownish black colour. The intensity of the latter is increased by the increased addition of acid, and also the consistence of the moisture.

The adulteration by poppy oil is seldom met with in commercial rape oil, because it is commonly much dearer than the latter. In the present year, however, the reverse was the case, and rape oil was found to have been adulterated with poppy oil. In this case the colour produced is of a very slight bluish green, approaching somewhat to yellow, but sufficiently distinct to admit of an inference being drawn, as to the adulteration, with perfect certainty. In such cases the specific gravity of both oils must be received as the sole criterion for identifying them.

It has been reported that tallow oil has several times been mixed at Paris with rapeseed oil: besides the brownish colour produced by sulphuric acid, the tallowy smell, the brown colour, the acid reaction, and last, although not least, its density, which is less than any other of the fixed oils, are such decisive characteristics, that we must be blind indeed if we do not instantly discover this fraud.—*Annals of Chymistry and Practical Pharmacy.*

CASES OF POISONING

WITH CERATE MADE WITH ARSENICATED CANDLES.

By DR. ERRARD, of Jujurieux (Ain.)

CASE I.—A man, aged 53, was recovering from pneumonia, which had been successfully treated by repeated bleedings, when, on my recommendation, compresses covered with cerate were applied to the sores produced on both arms by the application of blisters.

Very early the next morning I was called to the patient, whom I found in an alarming state. His loins were painful; his tongue red, dry, and cracked; his thirst was insupportable; and he suffered from griping, not followed by stools. I observed involuntary contractions in the muscles of the lower limbs and of the back; the pulse was small, irregular, and frequent. The patient had headache.

I did not examine the sores, which were reported to be red and inflamed. The patient died in the evening.

I suspected that some injurious remedy had been administered, not being able to explain otherwise the appearances of such serious symptoms which had no connexion with the previous disease; but the relations of the deceased gave negative answers to all my questions asked with this view, and I did not push my inquiries farther.

CASE II.—A week after the termination of the previous case, a young girl, to whose thigh I had ordered a blister to be applied, to relieve a headache, arising from amenorrhœa, put a compress covered with cerate on the sore. She soon felt extreme pain, which obliged her to take off the dressing, and I was sent for. The girl complained of intolerable thirst, of nausea, and of pain in the epigastrium. Her tongue was red; the sore of the thigh was inflamed, and bled a little. There were jerking movements in the limbs.

I prescribed a soothing potion, a *tisane*, enemata, fomentations with mallow water, and a bath; and the patient was cured in a few days.

The relations considered the application of the cerate to the sore as the cause of the symptoms. I examined the remedy in order to satisfy them. It was white, unctuous to the touch, and, in short, of normal appearance. Still I immediately recollected that in the first case, the serious symptoms, which were the forerunners of death, resembled those of the girl, and had also appeared soon after the application of compresses covered with cerate to the sores of her arm. I also recollected that a short time before, a mother had complained that a cerate which she had applied to her child had increased the existing disease, which was an inflammation of the ale of the nose. On inquiry, I found first, that the cerate used in the three cases had come from the same house; and secondly, (which explained the symptoms produced) that it had been made with candle-ends at 1 fr. 60 cent. (sixteenpence) per pound; these candles being of a new kind, in the manufacture of which arsenic is used.

I regret that these cases have not been made more valuable by a chemical examination of the cerate used. Still they show, I think, the necessity of enlightening the public concerning the composition of those candles; for in almost every village there is a small *pharmacie* kept by pious ladies, or by nuns, who often make cerate with the ends of candles which have been used in the church of the place; and candles made of tallow bleached and hardened by arsenic are beginning to be employed in churches.—*Gazette Médicale*, Nov. 5, 1842.

ON THE USE OF THE NITRATE OF SILVER IN SUBSTANCE.

To the Editor of the Medical Gazette.

SIR,

IN cases of intolerance of light, with inflammation, or a granular state of the conjunctiva, ulceration or opacity of the cornea, and other affections of the eye, besides the appropriate constitutional treatment, I have been for years in the habit of lightly applying, with the greatest benefit, the nitrate of silver in substance, *externally*, to the lids, with the view of allaying the morbid susceptibility of that portion of the fifth pair of nerves supplying these parts. Even in intolerance of light, where other structures are involved, sometimes considerable benefit is experienced by this harmless and simple treatment. I am induced thus briefly and publicly to announce the fact, from reading a paper by Dr. Hocken entitled, "A New and Improved Plan," &c. &c. Now as Dr. Hocken has, with other pupils, been in the habit of seeing my practice at the out-patients' room at St. Bartholomew's Hospital, I think it only justice to myself to state, that this treatment has been there successfully employed, not only in "slight ophthalmic affections," but in many severe ailments, and although decidedly an "improved plan," it is certainly not "new" either to my pupils, or to your obedient servant,

THOMAS WORMALD.

Bedford Row, Nov. 29, 1842.

IMPROVED METHOD OF ADMINISTERING COD LIVER OIL.

DR. URE has suggested the adoption of cod livers as a diet for patients who are recommended to take the oil. In order to prevent the loss of oil during the process of cooking, he recommends the livers to be immersed entire in boiling water, to which a sufficient quantity of salt has been added to raise the boiling point to about 220° Fahr. The sudden application of this high temperature coagulates the albumen of the liver, and prevents the escape of the oil. When the liver is cut, the oil exudes, and mashed potatoe may be used as a vehicle. Dr. Ure informs us, that having been advised to take cod liver oil, he found the nauseous flavour very objectionable, until he contrived the above plan, which he finds to answer extremely well.—*Pharmaceutical Journal*.

ROYAL COLLEGE OF SURGEONS.

LIST OF GENTLEMEN ADMITTED MEMBERS.

Friday, November 25, 1842.

F. H. Woodforde.—J. Dowling.—H. Aylward.—S. S. Smith.—J. J. Gray.—C. J. Newstead.—A. Collinson.—J. Mahony.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED
CERTIFICATES.

Thursday, November 24, 1842.

R. G. Coombe, Newcastle, Staffordshire.—
R. Palmer, Letecomb Regis, Berkshire.

A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, November 19, 1842.

Small Pox	7
Measles	20
Scarlatina	50
Whooping Cough	28
Croup	6
Thrush	2
Diarrhœa	3
Dysentery	1
Cholera	0
Influenza	4
Typhus	18
Erysipelas	7
Syphilis	1
Hydrophobia	0
Diseases of the Brain, Nerves, and Senses ..	142
Diseases of the Lungs and other Organs of Respiration	285
Diseases of the Heart and Blood-vessels ...	21
Diseases of the Stomach, Liver, and other Organs of Digestion	53
Diseases of the Kidneys, &c.	6
Childbed	11
Ovarian Dropsy	0
Disease of Uterus, &c.	5
Rheumatism	1
Diseases of Joints, &c.	4
Ulcer	0
Fistula	0
Diseases of Skin, &c.	0
Diseases of Uncertain Seat	105
Old Age or Natural Decay	79
Deaths by Violence, Privation, or Intempe- rance	22
Causes not specified	5
Deaths from all Causes	886

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude 51° 37' 32" N.
Longitude 0° 3' 51" W. of Greenwich.

November.	THERMOMETER.	BAROMETER.
Wednesday 23	from 28 to 43	29.42 to 29.25
Thursday . 24	32 48	28.86 28.89
Friday . . 25	38 44	28.89 28.86
Saturday . 26	36 47	29.02 29.19
Sunday . . 27	29 47	29.29 29.18
Monday . . 28	41 53	28.93 29.14
Tuesday . 29	38 49	29.42 29.50

Wind, S.W., S., and S.E. Except the 26th, generally cloudy, with frequent rain.
Rain fallen, .995 of an inch.

CHARLES HENRY ADAMS.

NOTICE.

We regret that we cannot make room for Dr. Aldis's paper.

WILSON & OULTVY, 57, Skinner Street, London.

THE
LONDON MEDICAL GAZETTE,
BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences:

FRIDAY, DECEMBER 9, 1842.

LECTURES
ON THE
THEORY AND PRACTICE OF
MIDWIFERY,

*Delivered in the Theatre of St. George's
Hospital,*

BY ROBERT LEE, M.D. F.R.S.

LECTURE IX.

*On the Formation and Structure of the De-
cidua Reflexa, and the Purposes served
by the Decidual Cavity in the Human
Ovum.*

ON the 10th of March, 1832, a young woman, who was in the second month of pregnancy, poisoned herself with oxalic acid. The uterus had acquired double the size which it usually exhibits in the unimpregnated state. It was five inches long, three and a half in the greatest lateral direction, and two inches in the antero-posterior diameter. A longitudinal incision was carried down the middle of the posterior surface, crossed by a transverse one parallel to the entry of the fallopian tubes. The thickness of the parietes of the uterus, though greater than in the unimpregnated state, were not proportionate to the general increase in the dimensions of the organ: they were four lines at the fundus, and six lines at the cervix, gradually increasing towards that part: the chief difference was observable in the already enlarged size of the uterine venous sinuses. The deciduous membrane, which closely adhered to the inner surface of the uterus, was then laid open by two incisions parallel with the longitudinal and transverse incisions previously made in the parietes of the uterus. The cavity of the uterus being exposed, the ovum, about the size of a pullet's egg, came into view, and was observed to be situated towards the lower part of the uterus. It was lodged entirely in the cavity of the body

of the uterus, and no part of it extended into the cervix. The part of the cavity to which it adhered was included between two parallel lines, drawn, the one transversely across the uterus at the distance of half an inch below the entry of the fallopian tubes, the other at two inches distance from the os tincæ: consequently, the ovum was situated altogether below the entry of the fallopian tubes, and was unattached both at its upper and lower part, leaving a free space or canal between it and the os tincæ, corresponding to the shape of the elongated cervix, and a much larger cavity, which was the decidual cavity, between the upper part of the ovum and the fundus uteri. Intervening between the superior and unattached surface of the ovum and fundus uteri was a broad cavity, measuring three inches in the lateral, and one and a half in the antero-posterior diameter, and which appeared at first only a few lines in depth, but on further inspection was ascertained to be nearly two inches in depth. The upper concave surface of the cavity formed by the decidua lining the fundus uteri, or uterine decidua, was irregular, and slightly reticulated. The inferior convex surface formed by the decidua covering the villi of the chorion, or decidua reflexa, was perfectly smooth, resembling somewhat the external serous surface of the uterus. On examining this with a magnifier, numerous small elliptical openings were seen in every part of the membrane. Into this large cavity, between the decidua reflexa and the decidua vera, the fallopian tubes opened by palpable orifices; that on the left side, by which the ovum had entered the uterus, being rather more than a line in diameter; that in the right rather less. The cavity thus formed between the decidua lining the fundus uteri, and the decidua covering the upper and unattached portion of the ovum, or decidua reflexa, was filled with a red-coloured serous fluid. The ovum was next laid open by an incision through the chorion parallel with the longitudinal incision of the

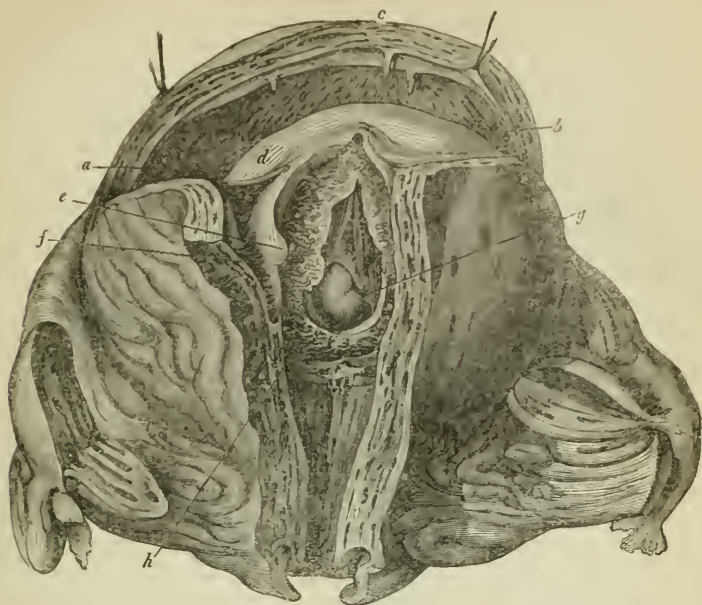
uterus, and the amnion enclosing the embryo was brought into view. The placenta was situated principally over the cervix and posterior part of the uterus, and the decidua, closely adhering to the placenta, passed across the upper part of the cervix uteri in the form of a thick reticular membrane. The decidua was then observed to extend upward between the uterus and chorion, every where firmly connecting these together as high as the entrance of the fallopian tubes. From this point the deciduous membrane was spread out in two different directions—viz. over the upper convex and unattached surface of the ovum to form the decidua reflexa, and over the whole concave surface of the fundus uteri to form the uterine decidua. Between these membranes was the decidual cavity, into which the fallopian tubes freely opened.

If you examine this gravid uterus of two months, you will see the chorion and amnion enclosing the embryo, and umbilical cord, and the placenta, covered with its decidua, adhering all round to the upper part of the neck of the uterus. You will also see clearly that the decidua reflexa lies entirely above the villi of the chorion, on that side of the ovum where the placenta does not exist, and where the ovum is not attached to the uterus. In all the diagrams from Dr. Hunter, Wagner, and other anatomists, which you have seen, the placenta has invariably been represented as adhering to the fundus uteri, and the decidua reflexa has been situated near the cervix, and appearing as if mechanically depressed or pushed down before the chorion or ovum. But in this preparation it is obvious that the decidua reflexa could not have been pushed down before the ovum, because it lies above or covers the ovum—the ovum lies between the decidua reflexa and the cervix uteri—and as the ovum enlarged the decidua reflexa must have been forced upward to the fundus uteri, which was lined with the decidua vera, instead of downward to the cervix. The decidual cavity is, you observe, at the fundus uteri, above the ovum, and both fallopian tubes open into this cavity by palpable orifices. Instead of being covered with the uterine decidua, this membrane passes into them, and they are left completely pervious, so that no membrane existed which the ovum could mechanically push before it. I am not aware of the existence of any other specimen of the gravid uterus at so early a period, in which the placenta is adherent to the neck of the uterus, and the decidua reflexa is placed above the villi of the chorion, or that part of the ovum which is not attached to the uterus; but it is impossible to doubt that in all cases of placental presentation in the early months, the decidua reflexa completely invests the villi of the chorion,

and that the decidual cavity is situated at the fundus of the uterus. If the statements of the authors above alluded to, and the generally received opinions respecting the formation of the decidua reflexa, were well founded, it would follow, that in all cases the ovum would attach itself to the uterus by the placenta, either directly over the edges of the fallopian tubes, through which it had descended, or to its immediate vicinity, and that the deciduous membrane would never be found interposed between the uterus and placenta, as it invariably is. The facts which have now been adduced, and will hereafter be stated, demonstrate that the fallopian tubes are open in the early months of gestation, that the ovum may attach itself, by the placenta, to the fundus body, or cervix uteri, and that the deciduous membrane forms neither a shut sac nor inorganic layer, prior or subsequent to the arrival of the ovum in the cavity of the uterus. These circumstances are also strictly in accordance with the fact, that when the ovum can first be perceived, it lies loosely imbedded in the soft, flocculent, albuminous matter which, at this period, coats the inner surface of the uterus, and that this pulpy semifluid matter becomes gradually converted into those delicate organised membranous layers by which the attachment of the ovum to the uterus is so firmly secured, and the most important function of the ovum performed during the whole period of pregnancy. The albuminous substance interposed between the uterus and chorion becomes the decidua uteri, or decidua vera, while the albuminous matter which envelopes the unattached hemisphere of the ovum becomes the decidua reflexa. To whatever part of the uterus the ovum adheres by the placenta, its relation to the deciduous membranes will be the same, the uterine decidua forming the connecting membrane between the ovum and uterus, and the decidua reflexa covering only that part of the chorion which hangs loose within the cavity of the uterus. Dr. William Hunter offered no explanation of the manner in which the decidua reflexa is formed, and Dr. Baillie, who completed his description of the gravid uterus and its contents, says, that the manner in which the decidua envelopes the ovum has never yet been observed, and therefore can only be a subject of conjecture. The most probable supposition is, that the ovum passes from the ovarium into the cavity of the uterus, while the coagulable lymph is pouring out by the arteries of the uterus, which is afterwards changed into decidua. "One can hardly imagine," he says, "that the ovum should make its way into a membrane which is already formed, and, though tender, yet capable of some degree of resistance.

In the following figure are represented

the appearances above described in the gravid uterus of a young woman who destroyed herself by oxalic acid in the second month of pregnancy.



a, The entrance of the left fallopian tube into the decidual cavity; *b*, the uterine orifice of the right fallopian, also pervious, and opening into the decidual cavity; *c*, the decidua vera, or decidua uteri, coating the inner surface of the fundus uteri, and forming the outer wall of the decidual cavity; *d*, the decidua reflexa lying above the ovum, and covering all that portion of it which is not attached to the uterus, and which is occupied by the villi of the chorion; *e*, the decidua vera, or uterine decidua, passing down between the uterus and placenta; *f*, the chorion; *g*, the amnion; *h*, the placenta adhering to the neck of the uterus, and the placental decidua torn passing across the upper part of the cervix, which is not shortened.

M. Velpeau thinks that the membrane which lines the fundus uteri in this preparation is not the decidua vera, but the mucous membrane of the uterus altered. M. Coste several years ago, when in London, before examining this uterus, had formed the same opinion. To determine the point, it was removed from the spirit, and a much larger portion of the decidua detached from the fundus of the uterus than is seen in this drawing, and the correctness of the description which I have given was so completely demonstrated, that he expressed himself perfectly convinced that the decidua reflexa lay above the unattached part of the ovum, and that the fundus uteri was lined with the decidua vera; the lining membrane of the uterus being distinctly seen after the separation of the decidua from it. M. Coste admitted that before examining this preparation he doubted the existence of the decidua reflexa; as some other anatomists on the continent have done. But there is another subject of far greater importance than the origin and mode of formation of the decidua reflexa; viz.

the purposes served by the decidual cavity in the ovum. I believe the decidual cavity is peculiar to the human ovum, and does not exist at all in the ova of the lower animals; it certainly has no existence in the ova of any of the larger quadrupeds.

In 1832, M. Breschet stated in his work entitled "*Etudes sur L'Oeuf*," &c. that this cavity always contains a fluid, which at an early period is colourless, mucous or slightly albuminous, and which has at a later period a milky appearance, and resembles an emulsion, united to a little mucilage of a faint rose colour. He says it must amount to several ounces when the ovum has reached the cavity of the uterus, and at the time the decidua reflexa begins to be formed; but he admits he was never able to collect the fluid so as to have it submitted to chemical analysis. This fluid he called *hydropericione*, having previously applied, without the slightest advantage, the term *fœtal perione* to the decidua reflexa, and uterine perione to the uterine decidua. M. Velpeau, in his work on *Embryology* (1833), likewise stated that

the decidual cavity contains a fluid which he has thus described. "*Le liquide qui remplit sa cavité et tient ses deux lames écartées, parfois tout à fait limpide, est le plus ordinairement rougeâtre, filant, semblable à du verre fondu, ou mieux, à du blanc d'œuf. Je n'ai point pensé à le faire analyser.*" M. Breschet thinks that this fluid promotes the slow and regular dilatation of the uterus, and protects the ovum; and that it contributes to the nutrition of the ovum and embryo, before the vessels of the embryo and the vesicula umbilicalis are formed. It is difficult to believe that the decidual cavity, if it exists at all at this early period, should be able to contain several ounces of hydroperrine.

The following facts seem to prove that the circulation of the maternal blood in the human ovum during the early months is entirely carried on by the decidual cavity and its walls, and by the cells of the placenta and chorion. In a healthy recent ovum of six or eight weeks, numerous small tortuous canals or arteries are visible in the placental decidua. These vessels usually project a little beyond the surface of the placental decidua, and the orifices with which they had anastomosed with the arteries of the uterus are very distinct. These decidual arteries are often seen in the placental decidua filled with blood, at the end of the ninth month, and have been minutely described by Dr. W. Hunter. It is now admitted by all anatomists that these curling arteries or canals in the placental decidua in the latter months, convey the maternal blood from the uterine arteries into the interstices or cells of the placenta, and that there is no other channel by which the blood can be conveyed into the placenta. Elliptical openings can also be seen in the placental decidua both in the early and advanced months, which anastomosed with the oblique venous apertures which are always found in the lining membrane of the uterus where the placenta has adhered. A communication is formed by these openings between the cells of the placenta and veins of the uterus, and the blood which has been carried by the decidual arteries into these cells flows back into the uterine veins, through these oblique openings in the placental decidua. At the end of the second month of pregnancy only about a fourth part of the chorion is occupied by the placenta, the remainder being covered with the villi of the chorion and decidua reflexa, and is unattached to the uterus. It is obvious therefore that at this time the whole of the blood which enters the ovum, and which is invariably found distending the cells of the placenta and chorion, must pass through the arteries of the placental decidua. But the blood which flows from the cells of the placenta into the cells of the chorion

cannot flow back and pass through the openings in the placental decidua into the veins of the uterus, unless there exist two currents of blood in the cells of the chorion flowing in opposite directions, which it is impossible to admit. The blood, therefore, which fills the cells of the chorion, must pass by another route into the venous system of the uterus than by the elliptical openings in the placental decidua; and it can only be through the decidua reflexa and decidual cavity, which I now believe performs the office of a great venous sinus.

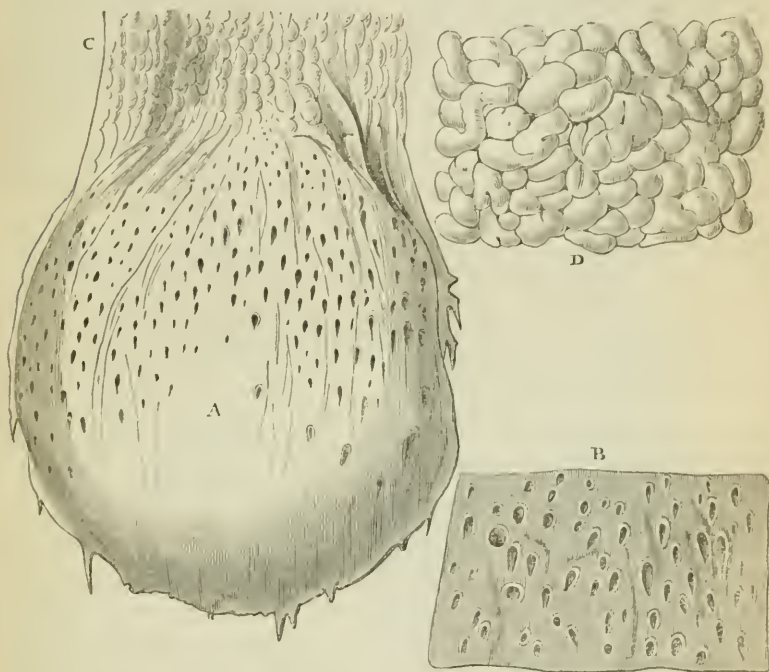
If you examine the decidua reflexa in a perfectly healthy ovum, you will observe numerous small oblique openings, with smooth edges, in the whole of the membrane, but in greatest number near the margin of the placenta, where an angle is formed by the uterine decidua reflexa. These openings in the decidua reflexa communicate with the cells of the chorion, and the cells of the chorion with those of the placenta. I have repeatedly filled all the cells of the chorion and placenta with air, by introducing a blow-pipe into one of these apertures in the decidua reflexa; and when the air has filled all these cells, it has escaped freely through the surrounding openings in the decidua reflexa. The same has been done with mercury; and in this ovum [exhibiting it] the whole of the cells of the chorion and placenta have been filled with injection introduced by one of these openings in the decidua reflexa. When the cells were filled with injection, it began to escape from the openings in the decidua reflexa around, and you can see the injection hanging through some of the openings. These facts prove that there exists, by means of these openings in the decidua reflexa, a free communication between the cells of the chorion and the decidual cavity. But there is another still more conclusive proof. If you take a recent ovum, the decidua reflexa of which is in a healthy condition, and make slight pressure, you will see the maternal blood begin to flow through these openings from the cells of the chorion; and I can now shew you several ova, in which coagula of the fibrine of the blood are seen filling these openings, and were hanging through them into the decidual cavity. These coagula could not have been formed in these canals if the blood had not been actually flowing through them, before the separation of the ovum from the uterus. The decidua reflexa, besides, is covered, as you see in this preparation, by a fine membrane like epithelium, which has been dissected off, and floats in the spirit, and of which a beautiful drawing has been made by Mr. Perry. This fine membrane not only covers the whole decidua reflexa, and passes into the openings in it, but it is also reflected over the whole inner surface of

the uterine decidua. The whole decidual cavity is therefore lined with this very fine membrane, which resembles the serous membrane of cavities which contain blood.

In many morbid ova expelled in abortion the decidua reflexa is in a hard, altered state, and few or no openings like those now described, can be observed in it, or only close to the margin of the placenta. The cells of the

placenta and chorion are generally observed in these ova to be full of masses of coagulated blood,—a condition which is usually called apoplexy of the ovum, and appears to arise from the obliteration of the canals in the decidua reflexa.

The appearances presented by the orifices of the canals in the decidua reflexa are seen in the following drawings.

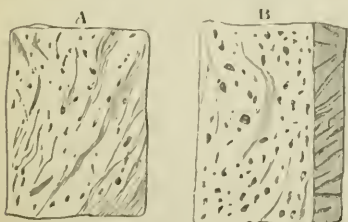


A, the decidua reflexa, with a few of the smooth orifices of the canals passing between the cells of the chorion and decidual cavity—natural size. The openings had almost entirely closed in that part of the decidua reflexa, which was most remote from the placenta, and the villi of the chorion had here also nearly disappeared.

B, the openings in the decidua reflexa as seen through a simple lens of an inch focus.

C, the inner surface of a small portion of the uterine decidua or decidua vera, unusually thick and rugous.

D, a magnified view of the same membrane, with a few small orifices of vessels.



In these figures are represented the openings in the decidua reflexa and uterine decidua, as seen in another ovum of an earlier age.

A, a small portion of decidua reflexa magnified.

B, inner surface of uterine decidua, with the veins passing obliquely through the membrane to the uterine surface.

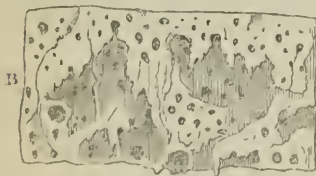
The outer wall of the decidual cavity is formed by the uterine decidua, which varies much in thickness. The outer surface of this portion of the decidua, which had adhered to the uterine wall, is usually very

irregular, and long slender filaments from thick roots are often seen projecting from it: some of these filaments appear to be hollow. A great number of openings are also visible on the outer surface of the uterine decidua, which are the terminations of venous canals which pass obliquely through this membrane from the smooth inner surface. I have not observed any considerable arteries in this portion of the decidua, similar to those which are seen in the placental decidua. The inner surface of the uterine decidua is comparatively smooth, and, seen through a magnifier, appears not very unlike the convolutions of the brain: at the bottom of these are deep grooves or depressions, in

which are situated numerous minute apertures of a circular or oval form. There are some of these openings on the raised portions of the membrane as well as in the grooves. Into these openings the epithelium which lines the decidual cavity passes, and coats the venous canals in the decidua uteri. These veins pass obliquely through the membrane: they frequently communicate together so as to form a great plexus, and gradually increase in size as they approach the uterine surface. The appearances presented by the orifices of the veins on the inner surface of the uterine decidua are seen in these figures, but by no means so clearly as in the preparation and drawing.



A. The orifices of the veins of the uterine decidua opening into the decidual cavity: natural size.



B. A portion of the same membrane as seen through a good lens.

I once saw the decidua uteri adhering through its whole extent to the inner surface of the uterus in the second month, with all these veins distended with firm dark clots of blood. On separating the membrane gradually, these coagula were seen passing from the decidual veins into the veins of the uterus. The trunks of the veins were on the uterine side of the membrane, and they had evidently been conveying blood from the decidual cavity to the veins of the uterus.

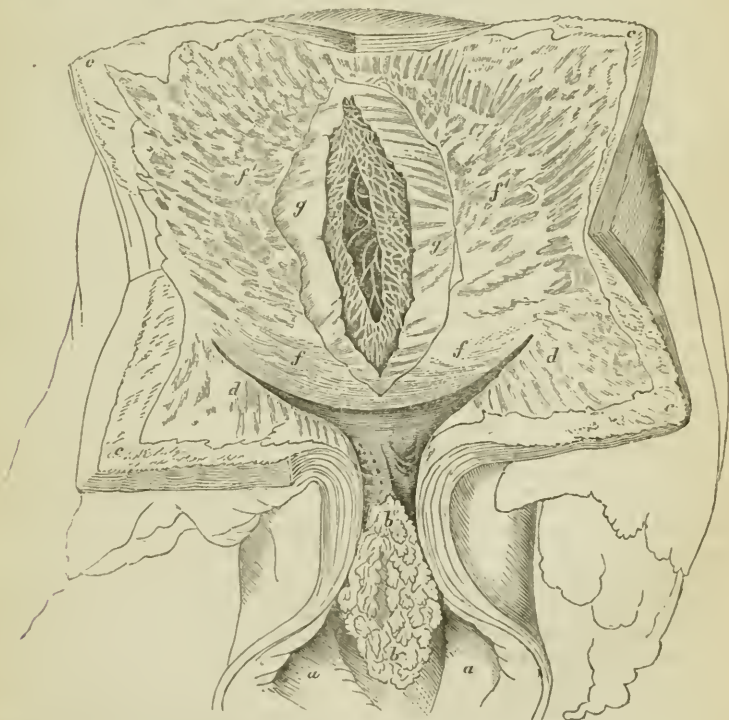
All the veins of the uterine decidua, in several of these preparations which you have seen, are filled with coagula of the fibrine of the blood; and by following these, the course of the veins from the inner to the outer surface of the membrane can be traced. In *this* preparation all these veins have been filled with a white injection; so that the direction of the vessels, and their connection with one another, and their termination on the outer surface of the membrane, can be clearly seen. It was by observing the manner in which the coagula of the fibrine of the blood passed through the placental decidua into the veins of the uterus, and by following coagula from fibrous tumors of the uterus into their veins, that I first became acquainted with the manner in which the circulation of the blood is carried on in the placenta, and in fibrous tumors of the uterus. It was likewise by tracing the coagula which occasionally distend the veins of the decidua uteri, that I was first led to suspect that

these vessels do not convey blood or fluid of any kind from the uterus into the decidual cavity, as many physiologists maintain, but remove from this cavity that blood which had passed into it, through the openings in the decidua reflexa, from the cells of the chorion. In several specimens of ova expelled in abortion, with the decidual membranes entire, I have seen the cavity filled with fluid and coagulated blood. Coagula of the fibrine were seen hanging out of the orifices of the canals in the decidua reflexa in this specimen, of which a drawing has been made. The blood could not have been forced here into the decidual cavity by any accident, as Breschet states was the case with the ovum described by Heusinger, where the decidual cavity was likewise full of blood.

From these facts, it appears probable that,

in the early months, the maternal blood is conveyed by the arteries of the placental decidua into the cells of the placenta and chorion, and that the blood which is not returned directly back to the veins of the uterus, through the venous openings in the placental decidua, flows from the cells of the chorion, through the decidua reflexa, into the decidual cavity; and from thence into the veins of the uterus, through the venous canals of the uterine decidua. As pregnancy advances the villi of the chorion and decidual cavity gradually diminish; and before the fifth month they have almost entirely disappeared; and the circulation of the blood is effected solely by the placenta, which has rapidly enlarged. The canals in the decidua also disappear, and the membrane is very thin, and presents a complete cribriform or lace-like appearance.

Diagram, from Wagner, of the gravid uterus at the end of the fourth month, laid open, and the involucra of the ovum delineated in situ. In the cervix there is a great plug of gelatinous matter.



a, os externum; *b b*, gelatinous plug filling the cervix uteri; *c c c*, the uterus reflected in four flaps; *d d*, decidua vera lining the uterus; *f f*, the decidua reflexa passing into the vera by a circular fold, slit smooth, and unconnected inferiorly; at *f l f l*, however, it is rough, as at this part it was in contact with the decidua vera, and was only separated from this by force; *g*, villi of the chorion; *h*, amnion; *x x x*, supposed tunica media, lying between the amnion *h*, and the chorion *f*.

LECTURES
ON THE
PRINCIPLES AND CLASSIFICATION
OF DISEASE,

Delivered at St. Thomas's Hospital,

By THOMAS HODGKIN, M.D.

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GENTLEMEN,—A field of such wide extent as the study of medicine, requires, for its successful cultivation, that numerous divisions should be employed. These, like the limits of physical geography, may be inherent in the nature of the subject; or, like those of political geography, they may be conventional or arbitrary. Divisions of these two characters may be multiplied almost indefinitely, and different principles may be assumed as the rule for their adoption. I regard it as unnecessary now to enter into the principles of arrangement, but shall proceed to adopt such divisions of the subject as its nature seems to indicate, and usage has sanctioned, until we arrive at points at which the consideration of classification may be regarded as important.

The object of our art being to apply remedies or means of relief to the various diseases with which the human frame may be afflicted, it is obvious that our first care must be to become acquainted with the characteristics of diseases. For this purpose, it is essential that they be accurately and intelligibly described. To produce these descriptions with sufficient minuteness and accuracy requires that the powers of observation should be especially cultivated for the purpose, and, that to avoid incessant and tiresome repetitions, and to ensure a greater degree of precision, the use of numerous terms should be introduced. The proper description of disease constitutes the division to which the term nosography has been given. It is of the greatest importance that the student of medicine should possess clear and accurate nosological ideas. Had attention more generally been paid to this, many perplexing discrepancies in medical authors would have been avoided, and those who have no intention of becoming authors, but merely design to study and practise their profession, will find the advantage of this accuracy when engaged in the treatment of disease, and in the conferences and correspondence to which it must give rise.

Nosography, or the description of disease itself, admits of division. The phenomena which the patient presents to our observation, whether in the colour, the temperature, the moisture or dryness of his skin, the appearance of parts accessible to examination,

the character of his various secretions, the pains of which he may complain, the perceptions which he has lost, and the changes in those which he retains, constitute what are termed *symptoms*; and the description of them constitutes that division of nosography which is termed *semiography*; as the laws of their production, and the conclusions which they furnish for the distinction of diseases, is termed *semiology*.

But when we have found the patient labouring under an assemblage of symptoms, the question naturally arises, what induced them? Have they been brought on by what he has eaten, or done, or omitted to do? Has he been subjected to any remarkable influences either of temperature or moisture in the atmosphere? Has he been in any situation known to produce similar symptoms in other persons, or been in communication with disease? Here we have the reason for another division of nosography, to which the name of *atiology*, or the knowledge of the causation of disease, is given. When nosography has supplied a full descriptions of disease characterised by their symptoms and causes, they would, without some system of arrangement, exhibit almost endless multiplicity, and consequently the greatest perplexity. Something, therefore, is required to be done with reference to the diseases with which nosography has made us acquainted, analogous to that which natural historians, whether botanists, zoologists, or mineralogists, have done for the countless objects of their studies. The perfect parallel between all these cases is exhibited in the fact, that Linnæus, the great author of the best artificial classification of plants, and of a similar classification of animals, being himself a physician, formed a classification of diseases also. The division of medical science which comprehends the classification of diseases has been called *nosology*. The importance of this subject, the great variety which it admits, and the difficulty of establishing a perfectly satisfactory system, are exhibited in the number of authors who have treated on the subject, and offered classifications of their own to their professional brethren. We have not only the classification of Linnæus, to which I have just alluded, but that of his predecessor, Sauvages, who must perhaps be regarded as the father of nosology; that of Cullen, which, notwithstanding various imperfections, has many merits, in addition to its general adoption in this country, to recommend it to every English student; that of Dr. Young, who never turned his attention to any subject without bringing to bear upon it profound learning, patient and careful observation, and remarkable original views; that of Mason Good, and a variety of others, on which it is unnecessary for me

here to dwell. In a subject so extensive as that of nosology, numerous authors have appeared, who, without attempting to grapple with the whole range of diseases, have taken up particular sections of the subject, into which they have introduced subordinate classifications, some of which are of great importance, and merit particular study. Of this description is the classification of diseases of the skin by Dr. Willan, also several classifications of the eye by distinguished oculists; and when I tell you that nosographers of the eye have extended the list of diseases affecting that organ to the extraordinary number of two hundred or more, you will readily believe that classifications would be necessary to relieve the memory, were there no other organs, with their respective catalogues of diseases, requiring a proportionate share of attention.

Various diseases possess certain characters in common, which may lead to their being occasionally spoken of in association, without its being designed to bring them together in nosological classification: thus, some diseases are capable of being communicated from person to person, whilst others are not so. Hence arises the very important distinction of infectious and non-infectious disorders. Those which agree in this respect may have no other title to be considered in the same family. The limits between the infectious and non-infectious diseases are by no means distinctly drawn, and the highest authorities have been at variance with each other on this very important practical question.

The distinction of diseases into the acute and the chronic is of the same description. Diseases properly placed at a wide distance from each other in nosological arrangement, may nevertheless agree in the possession of one or other of these characters; and diseases properly brought together in scientific arrangement may differ in these respects. Even the same disease may be seen in some individuals in an acute, and in others in a chronic form. It is equally certain that the precise limit between the acute and the chronic is not defined, and although conventionally the terms are as well understood as perhaps any which medical men are in the habit of employing, I do not remember to have heard it even suggested that within the duration of a certain number of days a disease should be regarded as acute, whilst if it extend through a greater number it is to be reckoned as chronic.

We commonly esteem a disease acute if the stages which mark its commencement, acme, and termination, are comprehended within a period of two or three weeks; but if, contrary to what is usually observed to take place in cases of the same disease, it should happen to be prolonged at a particular stage, it would be said to assume a

chronic character. Common catarrh affecting the mucous membrane of the respiratory organs exhibits perfect examples of these two characters. Cancer of the female breast, a disease which, if not timely removed by operation, proceeds to a necessarily fatal termination, passes so slowly through the stages of its progress that it may be protracted for many years; and if, in a particular individual, in consequence of some constitutional peculiarity, cancer of the breast were to pass into the ulcerative stage, spread in a few weeks to the neighbouring parts, and carry off the patient in six months, it might be said to have assumed an acute character. Hence you will perceive that the terms acute and chronic possess a comparative force, and that it is only by acquaintance with the diseases to which they are applied that we can comprehend the sense in which the speaker or writer may employ them.

Diseases are said to be endemic when, like goitre, or the enlargement of the thyroid gland—like elephantiasis, a peculiar disease of the cutis and subjacent cellular membrane—and like the plague—they occur in particular districts or regions; yet cases of disease, which for the most part are so limited, may occasionally be met with in other situations. Again, a disease may, at a particular time, be found to affect a remarkable number of individuals in the same locality, indicating the temporary prevalence of some pernicious influence; yet, of these very diseases, rare or even solitary examples may at times be seen in the same or other localities; when, in contradistinction to the term epidemic, they receive the appellation of sporadic. A disease may at the same time be both epidemic and endemic, of which the most striking example is perhaps that of plague, which, whilst in our own times it is so strictly endemic that it rarely occurs beyond the territories bordering on the Levant, is also so strictly epidemic that, even in the situations which it is known to affect, its occurrence, except at particular seasons, would be regarded as an extraordinary circumstance. Though the causes which operate in the production of endemic and epidemic disease are involved in great obscurity, they well merit continued careful research; and, with respect to the epidemic at least, the careful attention which has been devoted to the subject during a period of many years has led to the discovery of certain data which are of the highest importance both in the treatment of disease and in the employment of measures for the preservation of individual and public health. The field of research in this direction invites the perseverance of sagacious inquirers, who can scarcely fail to be rewarded by the discovery of important truths.

Diseases are said to be local or constitu-

tional. Thus, bronchocele, ovarian dropsy, and hydrocele, may be regarded as strictly local affections; no other organs of the body, and no functions of the system, being deranged by their existence, except those which are in immediate relation to the parts in which they exist. It can only be by their mechanical influence, by which they may eventually induce other disease, that constitutional affection can be referred to them. On the other hand, scorbutus, gout, and small-pox, may be pointed out as diseases in which the entire constitution is essentially concerned, notwithstanding the special appearance of derangement in some particular part of the body.

Some morbid affections are regarded as transmissible from generation to generation, and are consequently designated by the term hereditary diseases; although, with regard to some of these affections, the child may not come into the world labouring under the malady, as is the case with syphilis; but rather, possessing in its constitution a strong tendency to the development of the particular disease at a future period of its existence. Very careful investigators have not agreed amongst themselves on this point; some having been led by their observations to conclude that some of these diseases existed in a latent state during foetal life, whilst others have contended that they were not called into being until a subsequent period; *e. g.* the opinion entertained by Langstaff as to tubercle and malignant diseases.

Whilst I have been noticing some of the divisions of disease, I have passed over the definition of disease.

Disease has been defined as *any variation from the most perfect and healthy state of the several organs and functions of the living body*; but as few, if any, persons can be said to enjoy this universal integrity of parts and functions, who, nevertheless, are not considered to be in a state of disease, we must, as a practical distinction, adopt some other definition of the term, and the following, which has already been employed, will answer our purpose on the present occasion—namely, an uneasiness, excess, or defect, in one or more of the functions of the body or mind, recurring so often, or continuing so long, as to demand medical assistance.

Although I shall have to take up the diseases to which this description will apply *seriatim*, in connection with the parts of the body which they respectively affect, I have, on careful reflection, considered that I should be more likely to render myself intelligible to you if I commenced by offering some remarks upon disease in general, although the full elucidation of this subject belongs rather to a division of the study of medicine, which has been called general pathology, or institutes of medicine, than to that of the

practice of physic, with which, however, so far as I shall treat it, it appears to be inseparably connected.

Let us suppose a particular part of the body to have lost those conditions the possession of which constitutes the healthy state. The tokens of this change having taken place, or, in other words, the symptoms of the disease, may, as I have before remarked when explaining the term semiology, be very various; not merely depending upon the differences in the mode of local change which may take place, but in accordance with the relation which the part affected bears to the whole body. Thus, it may be so situated as necessarily to influence some very important function—it may directly interfere with respiration, with the circulation of the blood, or with the taking and digestion of food. We shall, in such cases, have symptoms depending upon the diseased state superadded to those which are the direct consequence of the disease in the part itself. We shall, therefore, simplify our view if, in the first place, we consider the derangement as taking place in a part not so essential to life as it must be when connected with the performance of the functions just mentioned. Let us go, for example, to the hand or the foot: we shall here have the advantage of considering a state of disease which does not, from its situation, necessarily produce the disturbance of any function essential to life. We have also the advantage of studying the symptoms by a more complete application of our senses, than is the case with the disease of an internal organ. You will be disposed to say this is a surgical, and not a medical case. I have purposely selected such a case, in order to exhibit the inseparable relations of these two departments, and to urge the importance of looking at surgical cases with medical eyes. It has most truly been said, *Chirurgia jauna medicina*. But to proceed. The hand, or even a part of the hand, receives some external injury, and comes into a state of disease. An uneasy sensation in the parts warns the individual that this has taken place; but if this be inconsiderable, he may experience no other inconvenience than the more or less complete deprivation of the use of his hand. If the mischief have been slight, and the part be merely protected, it soon recovers its former ease and usefulness. We have here a very simple case; yet even this affords some subject of reflection. For the part to be injured at all, implies that there must have been a derangement of structure; for pain, to have been felt, would lead us to inquire how this is produced, and for the part spontaneously to have recovered implies that a process had taken place the nature of which, though an every-day occurrence, is really wonderful, and requires investigation,

that we may, if possible, account for its not taking place in other instances, and promote its doing so. Let us look to the derangement produced. This may have been the separation of parts by some sharp instrument, in which case the wound is sufficiently obvious. A blow may have been inflicted, and, without any breach of surface having been produced, the part is rendered swollen, tense, and discoloured. Again, the part may have come in contact with hot water, which has caused it to become painful; first red; then the skin has been raised by a fluid poured out beneath it. We have, in these three cases, three different forms of injury. What is it that occasions pain in each of them? It may be simply said, oh! the nerves of the part have been irritated by the unusual state of things. But we must go a little further. In the case of the cut, it is manifest that the nerves may have been exposed; that first a solid body, and subsequently the air, has come in contact with them, and the knife being withdrawn, and the air excluded, the pain, which was sharp at first, may almost wholly cease. But in the case of the bruise there is no exposure of nerve; the parts naturally in contact with them have remained so, but they have been pressed upon with unusual force, and the pain which was felt on the infliction of the blow does not so quickly cease with the removal of the injuring cause as in the case of the cut. The swelling which has been produced shews that something has been poured out interstitially; that is to say, into the texture of the part, which becomes a cause of continued pressure, and consequent pain, provided the tension be considerable.

In the case of the scald, the nerves of the part have neither had anything brought in contact with them, nor have they suffered compression to induce pain. We have merely the influence of a higher degree of temperature, than the nerves, and the parts in which they are situated, are accustomed or prepared to endure. The sensation of severe pain is the immediate effect, and the continuance of the pain to a greater degree than may have been the case in either of the former instances, shows that something is going on in the part of a different character to that which may have taken place in them; nevertheless, the pain after a while ceases to be felt, the fluid by which the skin was raised disappears, and, as before observed, the part resumes its original condition. What has been the nature of the repair in these cases? In the case of the cut the divided parts have become firmly reunited. In the place of a mere fluid upon the cut surfaces, a solid bond of union, however small, has been produced, furnishing an example of what is called union by adhesion, or union by first intention. It is sometimes said that

this is the result of adhesive inflammation. Dr. Billing has objected to the use of the term inflammation as applied to the repairing process, inflammation being a state of disease which has ceased when the process of repair is going on. In most cases it is difficult to draw the boundary line, and the term healthy inflammation, as applied to that which is the prelude to the process of repair, will perhaps continue to be conventionally employed; nevertheless, I think Dr. Billing's criticism is just, and in some of the instances of disease which will hereafter come before us, practical suggestions may be derived from it. In the very simple and speedily terminated instance, which I have adduced, we seem to have the repairing process without the recurrence of previous inflammation. In the next case, or that of the bruise, the swelling subsides, absorption rather than deposition having characterised the process of repair; the blood which had escaped from injured vessels has either been taken up, or if it had been situated near the surface, it has perhaps come away with exfoliated skin. In the case of the burn or scald, the continuance of pain, and the progressive alteration in the appearance of the part after the heat has ceased to be applied, are, as I already remarked, the proofs that a disturbed process, or derangement of the functions of the part, has been set up, and continued. Such may have been the case in the other instances, but less necessarily and manifestly so. The pain experienced whilst this disturbed process is going on resembles that occasioned in the first instance by the application of heat. It is allayed by the application of cold, but recurs if the cold application is suspended, and with the pain the actual temperature is felt to be higher than that of the other hand in other respects similarly circumstanced. Hence the part is said to be inflamed, and the process which is set up is called inflammation; terms obviously derived from the sensible increase of temperature. The occurrence of this process not only as the result of injury, but set up by various causes at times so obscure that the part is said to be spontaneously inflamed, is so frequent and remarkable a part of the morbid conditions which we meet with, that it has very naturally been one of the most interesting inquiries into which the investigators of disease have entered, to ascertain in what inflammation essentially consists. It will be our duty to go into this distinct question at a future time. At the present moment we have rather to consider the effect of inflammation in the example adduced. If the continued pain attending the inflammation be very severe, more especially if the whole or a large portion of the hand have been scalded, the inconvenience is not limited

to the part affected: sleep is absent or disturbed; the surface of the body becomes generally hot, the pulse becomes quicker and stronger; the countenance bespeaks the uneasiness of the system; the appetite for solid food may be diminished or suspended, whilst that for fluids is, on the contrary, increased. It is now said that the accident has produced fever. The daily occurrence of instances resembling this in kind has produced a general idea of what is meant by the production of this state of fever, as well as by the term inflammation; yet the nature of this fever is really obscure, is attended with many complicating circumstances, and has exercised the patience of careful inquirers, and the ingenuity of speculators and theorists, as much or more than any other subject connected with medicine. The consideration of this question, like that of inflammation, we must reserve for another time. It is necessary, however, to our present purpose, to allude to some points connected with the subject. How is the general disturbance or fever excited in consequence of the local injury? The distressing and continued perception of pain is the fact which first excites our notice; and as we know that this is conveyed to the common sensorium through the medium of the nerves, we may attribute the production of general disturbance or fever to an influence propagated by the same channel. But we have another line of communication, which comes in competition with that of the nerves, namely that of the blood-vessels. We see that the part is reddened; we feel the increased warmth, which we know, in general terms, to be produced by the circulation of the blood; and we know, from the complaints of the patient, and, it may be, from our own touch applied to the arteries of the part, that increasingly strong pulsations are to be felt. Seeing that we have these two modes of communication, we shall perhaps do right to attribute to each a share of the effects produced; but it will hardly be right to do so without considering what may be done by each separately. It is possible for pain to be produced, of great severity and duration, without such injury in the part as materially to disturb the circulation in it; nevertheless, the whole system will seem to suffer in connection with it. Sleep may be banished, and a sense of severe distress produced. I may state, as an example, an instance which once occurred to myself. The fracture of my leg had rendered necessary the application of splints; and it happened that several days after the accident, and when the constitutional disturbance arising from it had very much subsided, one of the splints, without the knowledge of my excellent friend and skilful attendant, John Morgan, became to a very trifling degree

displaced, by which the margin of the opening left for the malleolus was brought in contact with one side of that projection. The pressure was of course not great, but it happened to be upon a sensitive part, and it was constant; and the circumstance of its having no remission seemed to render it increasingly intense. The whole system sympathised with it, and continued to do so with increasing severity for several hours, from my not at first perceiving the cause, and the mode by which it might be removed. When this was effected the relief was almost instantaneous, there being in fact no local injury worth notice: yet I am very sure that the continuance of such a cause would be sufficient to produce the most violent delirium. In severe cases of *tic douloureux* we also see what the propagation of pain through the medium of the nerves may produce, without the concurrence of much, if any, sensible local disturbance. On the other hand, we see that parts which can transmit little or no sensation of pain to the sensorium, from which they are cut off by paralysis, may become inflamed with less accompanying constitutional disturbance than is set up when such paralysis does not exist.

It is not equally easy to point out cases in which the constitutional effect is produced upon the system through the medium of the vessels, seeing that, in almost every case, the cooperation of the nerves may be contended for. A question is therefore involved, which has long been under dispute, and has been made the subject of curious and valuable researches. Nevertheless, I think I may state that the preponderance of argument is decidedly in favour of the opinion that the influence of poisoned wounds is communicated through the medium of the vascular system, and chiefly through the fluids which are conveyed, though the coats of the vessels themselves may perform some part; and in this way the cooperation of the nervous system is again contended for. There can be no doubt that some local inflammations, by which the system is greatly disturbed, whether induced by poison or not, extend along the course of the absorbent vessels, as we may see in the case of a dissection-wound, or a common whitlow. It is equally certain that inflammation may extend along the veins from the branches to the trunks; and in witnessing some of the investigations of Professor Alison, of Edinburgh, I have seen sufficient proof that local inflammation may extend along the arteries in opposition to the course of the blood. Besides these three demonstrable proofs that the vascular system may be involved in the communication which takes place between the part affected and the system generally, we may easily assure our-

selves of the increased heat extending along the limb from the inflamed parts, and of the more sensible pulsation in the arteries proceeding to it—effects which are promptly produced, and apparently in intimate connection with the production of constitutional effect.

ANSWER TO SOME CRITICISMS OF DR. LEE
ON

THE CHARACTERS OF EARLY CORPORA LUTEA.

By ROBERT PATERSON, M.D.

President of the Edinburgh Anatomical Society,
Physician to the Leith Dispensary and
Casualty Hospital.

To the Editor of the Medical Gazette.

SIR,

My attention has just been drawn to a lecture of Dr. Lee's, contained in your journal of the 11th current. In that lecture, Dr. Lee has made several statements regarding some observations on the corpus luteum, which I some time ago published in a series of papers in the 142d, 145th, and 147th numbers of the Edinburgh Medical and Surgical Journal. I deem it a duty both to myself and to the profession to correct some of these statements of Dr. Lee, in order to prevent the facts which I have recorded from being deliberately perverted.

The first of my papers on the subject in question refers to the history and characters of the early corpus luteum, and it is chiefly to it that Dr. Lee's remarks refer. Dr. Lee doubts whether three of these bodies that I have described and figured in the ovary as true early corpora lutea, are so; and observes, as to one of the cases, that it is "certain that she had never been pregnant, and that a true corpus luteum could not be found in the ovarium," because, says Dr. Lee, quoting the words of my report "the woman had been eight years married, and had had no family." Dr. Lee does not think proper to add the other circumstance, which I have especially mentioned, that there was every reason to believe that this woman, immediately previous to her death, which was ascribed to mal-treatment by her husband, had proved faithless to him, and been cohabiting with another man. Every one who knows ought of the history of impregnation will at once see the important bearing of this cir-

cumstance upon the point in question; and I deem it altogether unnecessary to add one word of comment upon the suppression of this latter fact by Dr. Lee, in his arguments upon the case.

The grounds, however, of Dr. Lee's disbelief, appear, as far as I can make them out, to be—1st, that there was no ovum found in the cases in question; 2d, the circumstantial evidence of impregnation was wanting; and 3d, the bodies have not the characters of true corpora lutea. Cases first and second, says Dr. Lee, "have not one of the characters of the true corpus luteum."

Now the true corpus luteum, as laid down by Dr. Lee himself, is a body of an oblong form, rather more than half an inch in length, and less than a quarter of an inch in thickness, having a different appearance from the stroma of the ovary, and consisting of a yellow substance enclosing a membranous lining, from which processes are sent out into the yellow substance to a considerable depth, and in some parts going quite through it, to the stroma of the ovary. In the two cases which I have recorded, and which Dr. Lee avers have not one of the characters of a true corpus luteum, they have actually all the characters which we have quoted above from Dr. Lee's description, with the exception of one, and that is the colour.

Dr. Lee seems totally unacquainted with the change of colour which the true corpus luteum undergoes from its very early to its mature state; such a change of colour, however, can be readily traced in the lower animals, as well as in early corpora lutea of the human subject. Dr. Lee, indeed, objects altogether to any analogy being deduced from observations on the corpus luteum of the lower animals; and although, in the early part of the same lecture, he mentions a host of facts drawn from experiments on the lower animals, and makes deductions from them, he will not hear of it being referred to as to any anatomical point; but, in my opinion, the inference is indisputably just, as the same process must take place in both, the anatomy of the Graafian vesicle being the same in both; and it has been used as such from De Graaf down to Dr. Lee.

It is but proper to add, that Dr. Lee considers the bodies, which I have described as not true corpora lutea in

one other particular, and in maintaining which he is peculiar. Dr. Lee avers that every true corpus luteum contains within it the two membranes of the Graafian vesicle, from the circumstance of his being able to divide the lining membrane of the cavity of the corpus luteum into two layers; but every one who is conversant with the late history of obstetric anatomy in this country, must know, that when it is required to support any particular hypothesis, it is possible to divide single membranes into layers, to deny the existence of vessels in parts where every one else sees them, and to find nerves where nobody else can find them. In several preparations of human corpora lutea which are in my possession, I could demonstrate to Dr. Lee, that the thick layer of lymph, which is enclosed within some early corpora lutea, could be torn into numerous layers, instead of the two which Dr. Lee mentions, and also that besides there is an external membranous covering to the substance of the corpus luteum.

Those bodies, then, which Dr. Lee states have not one of the characters of true corpora lutea, strange as it may appear, answer precisely to his own description of those parts.

But to return to his objections. *First*, there was no ovum found in the cases in question; and *second*, the circumstantial evidence of impregnation was wanting.

"The proof of conception having taken place," says Dr. Lee, "was wanting." "A membrane like the decidua has been met with when there was no pregnancy, or has been expelled in dysmenorrhœa."

Although there was no ovum found in the cases in question, we cannot admit Dr. Lee's inference that the circumstantial evidence of impregnation was wanting. The ovary was enlarged, and contained a body answering the description of the true corpus luteum, as given by Dr. Lee himself. The uterus was enlarged, and contained a soft decidual membrane. It was unnecessary, in my observations on the corpus luteum alone, to state the grounds for believing the membranes found within the uterus to be truly decidual. I now, however, beg to state, that these decidual membranes were examined by Dr. Sharpey, of London, when com-

pleting his observations on the tubular structure of the true decidua, and were considered by him, as well as by Drs. John Reid, Simpson, and Thomson, as possessing all the characterizing marks of true decidua; and, indeed, it was the decidual membrane of my 4th figure that Dr. Sharpey chose to delineate in his note to Müller's Physiology (translation), as exhibiting the structure of this membrane very distinctly marked.

With a true corpus luteum, then, in the ovary—a true decidual membrane in the uterus—is Dr. Lee entitled to say that here conception had not occurred? I speak not of impregnation, but conception.

Dr. Lee, from the reasoning he has adduced in the early part of the same lecture, drawn from the lower animals as well as the human being, knows that the ovum is a certain length of time in reaching the uterus; and Dr. Lee must be perfectly aware that cases from time to time occur affording an opportunity of inspecting these parts between the period of conception and that at which the ovum reaches the uterus. I am happy, however, to adduce a case in point, which was detailed by Dr. Allen Thomson, in his lectures on embryology, last summer.

Dr. Allen Thomson's name, in points connected with embryology, is universally allowed to be unquestionable; and he exhibited a recent case where the date of conception was precisely known, and where death took place exactly three weeks after that event; and yet, although there was a corpus luteum in the ovary (very similar in appearance to my 2d fig.), which he considered as a true one, and a decidual membrane in the uterus, which bore all the characters of the true membrane, yet no ovum was found in the uterus.

But, indeed, I cannot but feel honoured at having my opinions on the subject of the corpus luteum questioned by Dr. Lee in the same page in which he questions the accuracy of the opinions of Professor Baer, of Königsberg, the first embryologist of the present day. Dr. Lee obviously treats his opinions with as little respect as he has done mine, for he says that Professor Baer has promulgated erroneous views respecting the true corpus luteum; in fact, that he mistook a false

for a true corpus luteum: statements which are looked upon as strong when used on ordinary occasions, but certainly especially strong when used to denounce the opinions of one of the most accurate physiologists of modern times.

But seeing, Mr. Editor, that Dr. Lee cannot recognise the true corpus luteum in its earlier stages, when delineated by Baer, or when carefully figured by myself from recent preparations, may we not as justly question whether Dr. Lee himself actually knows a true corpus luteum? And certainly, if no ovarian body is a true corpus luteum but that which is lined by a double membrane, it will, I fear, be difficult for any one to present him with a genuine specimen, unless they have previously taken the trouble to cut the single contained lymphic membrane into two layers, and into two layers only.

These remarks have already extended much further than I expected; I shall therefore allow the subjoined letter of Professor John Reid, of St. Andrew's (who has devoted much attention to the subject, and on whose masterly powers of observation on anatomical points the medical profession of Great Britain has justly placed so much confidence), to confirm what has been said, and to answer some of the remaining criticisms of Dr. Lee.

Trusting that Dr. Lee will at some future period, on a full reconsideration of the subject, see reason to change his anatomical opinions on the corpus luteum, as he has already changed his published anatomical opinions on other questions connected with obstetric anatomy, I have the honour to be,

Your most obedient servant,

ROBT. PATERSON, M.D.

Leith, Nov. 27, 1842.

Letter from Professor Reid to Dr. Paterson.

My dear sir,—As I receive the MEDICAL GAZETTE in monthly parts, and not in weekly numbers, I have not yet had an opportunity of seeing the lecture of Dr. Lee, to which you refer in your letter of yesterday.

I have, however, no difficulty in giving explicit answers to the questions you put to me, in as far as these regard the three preparations which I submitted to your examination when you

were carrying on your researches into the structure of the corpus luteum, and which were described and figured by you in a paper in the 142d number of the Edinburgh Medical and Surgical Journal. The corpora lutea found in these three cases are those marked figs. 3, 4, and 5, in the delineations given in the paper referred to.

I have no hesitation in stating, that I do not entertain the smallest doubt that these were true corpora lutea. No one, I should imagine, who had an opportunity of examining the two last cases, could entertain any suspicion that an embryo was not present in the uterus in both; and though the ovaries were very minutely and thoroughly examined, no other appearance at all resembling a corpus luteum was to be observed, besides those which you have delineated. With regard to the first of these three cases, though no impregnated ovum could be detected, yet altogether, apart from the appearances presented by the corpus luteum, the microscopic examination of the membrana decidua lining the inner surface of the uterus has fully satisfied my mind, at least, that the female from whom it was procured had been lately impregnated.

You are perfectly correct in stating, that we frequently examined together fine sections of the mucous membrane of the uterus in the two first of these preparations, which are still in my possession; that the tubular structure lately described by Dr. Sharpey was distinctly observed; and that these two preparations were among those which I placed at Dr. Sharpey's disposal, when he was investigating the mode in which the membrana decidua is formed. I have also in my possession the uterus of the case which you describe immediately after that furnished you by Dr. Simpson, without giving the delineation of the corpus luteum, and I have also no hesitation in stating, from microscopic examination, that its inner surface was covered with a membrana decidua.

With regard to the question whether or not Dr. Thomson was correct in stating that there was a central cavity in the corpus luteum delineated in Fig. 4, there can be no doubt, as any one may readily satisfy himself by looking at the preparation in my possession, that there could

be none. I feel fully satisfied that all that Dr. Thomson meant by stating that there was a central cavity, (and in this he was perfectly correct,) was, that the true texture of the corpus luteum occupied the surface of the body only, and did not extend through the centre. The yellow plicated structure was confined to the circumference, forming a kind of sac, the centre of which was completely occupied by a reddish-grey coloured fibrinous mass, exactly as you have described it.

Having had the best opportunities of judging of the correctness of the delineations and descriptions you have given of the above cases, it is only an act of simple justice on my part to state, that I am perfectly satisfied of their accuracy. I do not remember whether I had an opportunity of examining the corpus luteum found in Dr. Simpson's case, when in a perfectly recent state, but I had little doubt, from an examination of the uterus, that its inner surface was covered with a membrana decidua.—I remain,

Yours very sincerely,
(Signed) JOHN REID.

University of St. Andrew's,
Nov. 25, 1842.

ON DISLOCATED TENDON OF THE BICEPS.

To the Editor of the Medical Gazette.

SIR,

IN your journal of November 11th, there is a paper by Dr. Knox on the "abrasion of diarthrodial cartilages by friction," in which he comments on a communication of mine published in vol. xxiv. of the Medico-Chirurgical Transactions, and accuses me, or rather Mr. Partridge, in a note which, as he justly observes, is *unworthy* of the text, and, he might have added, of himself, of intentionally concealing the priority of his own observations on dislocated tendon of the biceps.

I should not have allowed two opportunities to pass in the weekly publication of your journal, had I intended from the first to have replied to Dr. Knox's remarks; but it seemed to me that the prejudiced spirit in which they were written was sufficiently stamped upon them to prevent their receiving the attention which is due only to calm

and courteous criticism, and that consequently, although erroneous, they did not merit a refutation; but some friends have considered that, in justice to Mr. Partridge's character as well as my own, I was bound to set Dr. Knox right in this matter.

Not being a member of the Medico-Chirurgical Society, I requested my friend Mr. Partridge to communicate my paper, of which, contrary to Dr. Knox's insinuations, he did not originally write, nor afterwards alter, one single word.

With regard to the woodcut, had not Dr. Knox been wilfully blinded, he must have perceived that the drawing related to the first case, that of Joseph Cooper, in which the tendon is described as *lying on the lesser tubercle of the humerus*; whereas, in the second, it is represented as having slipped over the head of the bone, and *lying at the inner and posterior part of the joint*.

I regret that I did not mention Dr. Knox's paper (published in vol. i. of the MEDICAL GAZETTE, and entitled, "Altered condition of that portion of the tendon of the biceps flexor cubiti which passes into the shoulder-joint"), in my brief allusion to the form of injury of which it chiefly treats; but *rupture* of the bicipital tendon was not the subject of my memoir, and I only gave to it an incidental notice; whereas *dislocation* of the tendon, which it was the object of my cases to illustrate, is not even named in Dr. Knox's paper, although in his recent remarks he says—

"In 1827 I published in the LONDON MEDICAL GAZETTE an account of several dissections of shoulder-joints, which had evidently suffered some severe injury during the life of the person;" and referring to these cases, he continues, "I ventured to draw the conclusion that in some, at least, there had been rupture or dislocation of the bicipital tendon."

I trust this statement will prove to Dr. Knox, that I have not even encroached upon his subject, much less "made use of his property," on which, indeed, one might inadvertently trespass, while the Doctor allows to his claims such extensible limits as appears from the preceding paragraph.

I think it unnecessary, in conclusion, to do more than advert to the captious tone of Dr. Knox's remarks. I attributed it at first to some personal mis-

understanding between himself and Mr. Partridge; but I learn from the latter gentleman that his slight intercourse with Dr. Knox has always been of the most friendly character*.

I am, sir,

Your obedient servant,

JOHN SODEN, Jun.

Bath, Nov. 29, 1842.

CASE OF CHOLERA.

To the Editor of the Medical Gazette.

SIR,

SHOULD you deem the following case worth recording in your useful periodical, its insertion will much oblige

Your obedient servant,

J. COLLIER, M.R.C.S.

Brackley, Nov. 30, 1842.

I was called, on the 10th of October, 1842, to attend David Townsend, a labourer, aged 34, who had been seized about twelve o'clock in the day with vomiting and purging, violent cramps of the legs and belly, with chilliness of the surface. The countenance looked anxious, of a livid colour; the eyes sunk, and surrounded by a dark circle; cold perspiration on the forehead; pulse small, weak, and irregular; tongue clean, moist, and paler than natural; much thirst, and frequently asks for cold water. The evacuations, which were profuse, looked exactly like rice-water or gruel, and the sheet, although saturated, was not discoloured by them.

Viewing this case as one resembling the Asiatic cholera, and having seen three cases similar to it in the neighbourhood (one of which proved fatal on the fourth day), I gave him a full dose of brandy with opium, which remained on the stomach, applied warmth to the body, and the limbs to be constantly rubbed. Calomel and opium, with effervescing medicine, to be taken every two hours.

11th, 8 A.M.—Diarrhœa has ceased, but the vomiting and spasms continue; feels warmer; pulse 100; has not slept, nor passed any urine, since yesterday; bladder not distended. There being

some tenderness of the abdomen, I abstracted sixteen ounces of blood from the arm, which relieved him for a time. The man acknowledged having eaten a large quantity of sloes on the day previous to the attack, which, no doubt, proved to be the exciting cause of the disease. Ordered blue pill and colocyath, with liquor opii sedativus, in a saline mixture, every two hours; an injection of warm water; mustard cataplasm to the stomach.

9 P.M.—The stomach continues to reject the mixture and pills directly they are swallowed, and the consequent collapse is very great.

12th, 9 A.M.—Has not been able to get any rest during the night; tenderness of abdomen increased, particularly over the epigastrium; vomiting continues unabated, and, in addition, there is violent and continued hiccupping: pulse 120, and small. Ordered to continue the mustard cataplasms to the stomach, and injections of warm water per rectum: medicine to be given every four hours, with hyoscyamus and capsicum.

8 P.M.—Decidedly worse; medicines still rejected, nor has any benefit been derived, or the bowels relieved, from the injections: pulse 120. An injection of castor oil and turpentine was now tried in lieu of warm water, which was forcibly retained for fifteen minutes, when it was allowed to come away, but still without success. Directly afterwards two pints of warm gruel, with an increased quantity of turpentine and oil, were again injected, and forcibly retained for twenty minutes, when it came away without any admixture of stool, as all the others had done. He was now taken out of bed, and laid prostrate on the room floor, in a complete state of nudity, when several gallons of cold water were dashed upon the abdomen from a height of several feet. Directly afterwards he was placed in bed, and well wrapped up. The following mixture ordered:—

R. Solut. Magnes. Sulph. ζ viii.; Acid. Hydrocyanci, Mxij. M. ft. mistura sumat. Coch. iij. Mag. 2da quaque hora.

13th, 9 A.M.—Has not vomited since the cold water dash, and commencing the last mixture. Bowels slightly relieved in the night; countenance looks

* We did not like to decline Mr. Soden's letter, but he will perceive that we have omitted one sentence, as it did not appear to us calculated to do any good.—ED. GAZ.

better; pulse 86, and moderately full. Mixture continued, and the following pills in addition:—

R Ext. Coloc. Comp. ʒij.; Hyd. Chlorid. gr. xiv.; Pulv. Opii, gr. ij. M. ft. massa et in pil. xij. dividenda, quarum sumat duas cum singulis dosis misturæ.

8 P.M.—Feels decidedly better; the bowels having been copiously relieved of a quantity of offensive green matter during the day; able to take some tea and gruel with comfort.

14th.—Bowels have been again acted upon; tenderness of the abdomen subsiding; the hiccough continues very severe and frequent. Medicines continued.

15th.—Is considerably improved; hiccough entirely gone, and tenderness of the abdomen considerably better. Medicines continued.

16th.—Continues improving.

18th.—Tenderness of abdomen entirely gone; stomach perfectly tranquil; bowels moved. A large vesicle has made its appearance where the cataplasm was applied, together with eruptions, which are very tender and painful, caused probably by the frictions that had been used. To apply common poultices.

21st.—Convalescent. Ordered a mixture of Quina c. Infus. Aurant. Comp. ter dies sumend. To have mutton-chop, and wine, &c.

28.—He gradually gains his strength, but is still very weak. Perstat.

Nov. 8th.—Able to come to the surgery, a distance of four miles.

25th.—Has resumed his usual occupation.

ON THE PERFORMANCE OF TONSILOTOMY*

IN THE
ANGINOSE VARIETY OF SCARLATINA.

By JAMES YEARSLEY, Surgeon.
(For the London Medical Gazette.)

SINCE the introduction of vaccination, scarlatina, which we formerly held as secondary in importance to small-pox, has gradually advanced from this posi-

tion, and may, probably, now that the Vaccination Act has come into operation, be considered as the most formidable of all the exanthemata. Whether this has arisen from any increased severity in the nature of scarlatina itself, or whether it happens from the circumstance of a large number of delicate constitutions, which formerly would have fallen a prey to its ravages, being now left to the inroads of other diseases, among which scarlatina is one of the principal, it is not my object at the present time to inquire. I am desirous of drawing the attention of your readers to one of the most serious lesions occurring in the course of the disease, with the hope of suggesting a mode of treatment that may moderate, or, in some cases, remove the danger.

Much importance has always been attached to the throat symptoms, but latterly the formidable character of this complication, or rather integral part, of scarlet fever, has been more than ever insisted on. In the anginose variety, it is well known to be one of the earliest, and throughout the most marked and dangerous part of the disorder. The evils produced by the throat disorder are difficulty of swallowing, violent cough, disturbance of the cerebral circulation, so as to cause severe headache or even delirium, and the patient is distressed beyond measure by the continued effort to expel the glutinous secretion which collects about the fauces. The inflammatory condition, without doubt, affects the whole of the throat, but I am of opinion that engorgement of the mucous membrane, and enlargement of the tonsils, have the most considerable share in producing the swelling, irritability, and morbid secretion. It is this fact which brings me to the point of the present paper.

I fully believe that children who suffer to any extent from chronic enlargement of the tonsils are *cateris paribus* very much more likely to fall victims to scarlatina than those in whom a healthy state of throat exists before the accession of the fever.

Many observations on my own part, and inquiries among my medical friends, have convinced me of the truth of this position. The inference deducible is plainly evident. Children suffering from enlarged tonsils, who

* *Tonsilotomy*—a term proposed by the author of the paper to designate excision of the tonsils.

have not had scarlatina, ought to receive prompt and careful treatment, with a view to remove these enlargements. I believe that life might often be saved by their excision. A case lately occurred within my knowledge, in which scarlatina attacked a child so circumstanced. The fauces became entirely blocked up, and the patient died from suffocation. It is an everyday occurrence. A provincial surgeon was consulted in two cases of enlarged tonsils; an early day was appointed for their excision; before the day arrived, scarlatina attacked every member of the family. All did well except the subjects of the enlarged tonsils: they died. It is from facts such as these that I am induced to recommend the trial of excision at any period of the fever. To say the least of such treatment, it offers quite as good a chance as laryngotomy does, in obstruction of the larynx. It must be borne in mind that strangulation from closure of the fauces often happens as a purely local affection, while impediments to the passage of air through the larynx are generally complicated with bronchial or pulmonary disease, which materially lessens the chances of the success of an operation.

From the rather exclusive nature of my own practice, I have not as yet been able to test the success of tonsilotomy in scarlatina, and although, through the kindness of many medical friends, opportunities will probably immediately be afforded me of verifying or annulling the views here developed, still the prevalence of scarlatina at this moment scarcely justifies me in withholding those views, strengthened as they are by cases greatly analogous.

Some time ago it fell to my lot to show to the profession generally that which was previously known among them to a very limited extent; namely, that tonsilotomy, in ordinary circumstances, might be performed with perfect safety, almost without pain, and without hæmorrhage, generally not a teaspoonful of blood escaping. More recently I have had cases of catarrh, and severe sore-throat, where enlarged tonsils were present, acutely inflamed, and threatening suffocation, in which excision probably saved the lives of the patients, and in which also, the loss of blood was no more than, under the circumstances, was desirable. I consi-

der it therefore as proved, that enlarged tonsils may be excised, even when acutely inflamed. And it is this fact which led me to believe that the operation will be of eminent service in the anginose variety of scarlatina, when the urgency of the throat symptoms endangers life. To the forms of rubecula, in which the throat becomes affected, it may be equally applicable, as well as to the early stages of that disease, cynanche laryngea, in which tonsillary inflammation and enlargement is frequently the first symptom.

I may sum up by observing—1st, that the presence of enlarged tonsils is an important source of inconvenience and danger in all affections of the throat, especially in scarlatina, and more particularly in scarlatina anginosa, its most fatal variety; 2d, that it would be a great preservative against the mortality of scarlatina, if tonsillary enlargements were always removed either by medical or surgical means from children, and even adults, who have not passed through this fever; 3d, that where this has not been done, the danger may be in great measure obviated by performing tonsilotomy during the actual presence of scarlatina, or any disease of the throat threatening suffocation, and that no injury whatever is at all likely to follow the operation, if performed under these circumstances.

Such facts as I may be able to collect, whether favourable or unfavourable to my views, shall, with your permission, be laid before your readers in another and an early communication.

15, Saville Row, Nov. 29, 1842.

ANALYSES AND NOTICES OF BOOKS

“L'Auteur se tue à allonger ce que le lecteur se tue à abréger.”—D'ALEMBERT.

A Practical Treatise on the Human Teeth; shewing the Causes of their Destruction, and the Means of their Preservation. By WILLIAM ROBERTSON. 3d edit. London, Churchill. pp. 224.

THE fact of a book having gone through three editions is not a trilling argument in its favour; for we hold it to be unusual for a medical work to have a legitimate sale to such an extent without

some inherent merit to sustain and recommend it.

As its title-page signifies, this work is purely a practical one, having for its object a very simple elucidation of the cause and prevention of caries. Though there are many interesting anatomical and physiological observations throughout its pages, the volume is chiefly, and most importantly, occupied with a discussion of the nature and treatment of the diseases to which the teeth are liable. Prior to the appearance of the first edition of Mr. Robertson's treatise, in 1835, the prevailing opinions concerning caries of the teeth were those of Fox and Bell; the former maintaining that the disease consists in an inflammation of the bony substance of the crown of a tooth, which secondarily affects the lining membrane of the organ, causing its separation, and a consequent decomposition of the solid parts; the latter insisting that caries commences in inflammation of the bone immediately under the enamel, from which, he says, the tooth, owing to its imperfect vitalization, cannot recover, and death and decay are the consequence.

Mr. Robertson, on the other hand, maintains that the remote cause of destruction of the teeth is the decomposition of food which lodges in the interstices between them.

The inflammatory theory, then, is to the effect that the teeth decompose by vital action, commencing in their interior, and proceeding to their surface. Our author's theory is exactly the opposite, namely, that decay begins by chemical action upon the surfaces of the teeth, and proceeds to their interior, and that inflammation is the consequence, and not the cause, of caries. His arguments are chiefly derived from the fact, that the teeth decay only in such situations as are favourable for the lodgment and decomposition of food, and never upon their smooth and even surfaces: from their decaying in pairs, and at particular periods of life; from the ready relief which filling and filing afford, if decay be not too far advanced; from the disease commencing externally and proceeding inwards, and never conversely; and from the circumstance, that artificial teeth are liable to the same species of destruction as natural ones.

These arguments we apprehend to be

perfectly sound, and in accordance with the rules of common sense and experience: for we cannot imagine a disease, which owes its origin and progress to inflammation, to be susceptible of alteration or cure by means which, of all others, are most calculated to contribute to such action. But when the cause is purely chemical, and owing primarily to a defect of structure, it is not irrational to suppose that mechanical treatment will arrest or remedy it. It is on this ground that we think the practical application of Mr. Robertson's theory particularly valuable. Believing, as he does, that inflammation is not the cause of caries, but the consequence of it, and dependent upon the influence of atmospheric and other agencies upon the lining membrane of a tooth, he urges the necessity of removing any decay that may be apparent, *before the occurrence of pain*; for after its commencement there is little hope of a permanent remedy. He insists upon the propriety of constantly using a tooth-brush, so that any particles of decomposing food may be removed; and of an occasional inspection of the teeth by a dentist, that any lurking decay may be arrested. He tells us that these suggestions have wrought a considerable change in his own practice—that people now apply to have caries arrested, rather than to have teeth removed in consequence of its ravages; and he maintains that, if this plan were universally acted upon, tooth-ache would be comparatively unknown, and the organs would be preserved in beauty and usefulness to the remotest period of life.

We cannot but concur in our author's theory, and we cordially recommend the work to all who may feel interested in its contents.

MEDICAL GAZETTE.

Friday, December 9, 1842.

"Licet omnibus, licet etiam mihi, dignitatem Artis Medicæ tueri; potestis modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

PRESENT STATE OF PRISONS.

"ROME," says the adage, "was not built in a day;" and it would appear,

from the Reports before us*, that prison discipline cannot be built up in half a century. Since the time of Howard, the state of our prisons has constantly occupied thinking men; yet, in many instances, it is still below any thing which could have been reasonably anticipated. We do not speak of small faults,

quas aut incuria fudit,
Ant humana parùm cavit natura,

but of huge enormous defects, piled upon one another, like Ossa upon Pelion. And, though so palpable and so flagrant, that to be hated they need but to be seen, in many places they are continued from year to year, in spite of exposure and remonstrance—here to save fifty pounds, and there to gratify some crank of the visiting magistrates. Among the strange things still existing, we may mention damp ill-ventilated cells; the use of chains, rendered necessary by the insecurity of some jails; and diet tables far below scurvy point. Captain Williams, in his Report on the Northern and Eastern District, has some just observations on the diet of prisons. It is commonly assumed that the diet of a House of Correction should be inferior to that of the labouring population of the neighbourhood. Accordingly, in agricultural districts, where the poor eat very little meat, the prison dietary contains less, or sometimes none. But how great is the difference between the ploughman, with the sky above and the breeze around him, enlivened by cheerful intercourse with his fellows, and indulged with a certain choice in diet and action, and the same man pent up in a cold narrow cell, depressed by admonition and coercion, and left with a pound of oakum for his companion! Why, beef and ale would scarcely bring up such a

prisoner to his out-of-door level! A long course of bread and gruel is followed by diarrhœa and scurvy.

“I scarcely recollect,” says Captain Williams, “an instance of scurvy being prevalent in a prison, but where it might be distinctly traced to a want of variety in the diet, and its deficiency in nutritive qualities.”

The reason, of course, which has brought prison dietaries so low, has been the fear of encouraging crime by too comfortable a mode of living, in the place of punishment. But though this danger is not to be lost sight of, it is by no means an imminent one; the rustic culprit regrets the liberty of ranging over hill and dale; while your town thief would not exchange the fetid luxury of Dyot Street for the nitid walls and spotless floors of the most exemplary prison.

In some jails the diet is so destructively low that it obviously cannot be adhered to in long imprisonments. Thus, in the Derby County Jail and House of Correction, the daily allowance is 24 ounces of bread, four ounces of oatmeal made into two quarts of gruel (one for breakfast, and the other for supper), and one pound of potatoes for dinner, and half an ounce of salt. It is clear that this dietary is in direct contradiction of the 11th rule of the 4th of Geo. IV., which enacts, “*that every prisoner shall be allowed a sufficient quantity of plain and wholesome food.*”

This starving code is practically mitigated by the surgeon, who commonly orders a quarter of a pound of meat (daily?) for those who have been ten months in the prison; but every one will agree with Capt. Williams, that the diet-table ought to be re-constructed. In the Lincoln City Jail and House of Correction, sea-scurvy made its appearance among the prisoners. A woman,

* Seventh Report of the Inspectors of Prisons. II. Northern and Eastern District. III. Southern and Western District. IV. Prisons of Scotland, &c. Presented to both Houses by Command of Her Majesty. 1842.

for example, had swelling of the gums, petechiæ, and an almost insupportable odour from the mouth. She was pardoned, and removed to the Union work-house, where she died. A man had petechiæ, with both urine and stools bloody. Another man was in the last stage of debility, and seemed unlikely to recover; but his life was saved by placing him in the grand-jury room of the Sessions House. At the expiration of his sentence he was removed to the Union, where he was able to work at his trade of a tailor.

Dr. Cookson, who examined the prison at the request of the magistrates, attributes the presence of scurvy to three causes—the situation of the jail, its bad construction, and the diet. So wretched is the arrangement of this jail, that one only of the felons' sleeping-rooms has a casement window and a fire-place: in the other cells "there are no fire-places, nor even apertures for the escape of contaminated air: one of them, in which there are three beds, measures 9 feet 7 inches by 7 feet 9 inches—an area too limited to be healthy, even for one occupant, without a free influx of fresh air, and a means of escape for the product of respiration." The dietary, though not good enough to enable the prisoners to struggle against other depressing influences, is certainly better than in many other jails. It consists, or consisted, of a small portion of boiled beef four times a week (twice fresh, and twice salt), with bread and farinaceous vegetables. On the other days, they had the broth thickened with oatmeal.

Besides improvements in the ventilation of the prison, Dr. Cookson suggested several changes in the diet, among others the use of fresh vegetables, especially those of the cabbage class, and the disuse of salted meat. Mr. Kent, the surgeon, had previously found fault with the want of ventila-

tion, and the monotony of the diet. It is not stated whether these recommendations have been attended to.

From the report on the southern and western district, drawn up by Dr. Bisset Hawkins, it appears that the prisoners in Monmouth County Jail have 24 ounces of bread daily, together with a pound of potatoes, and four ounces of oatmeal; which is precisely the famishing scale of Derby! Those at hard labour, however, have 24 ounces of potatoes in addition, daily. In consequence of this wretched allowance, the surgeon was obliged to order extra food to a number of the prisoners. In one quarter the sick diet amounted to £16. 5s. 1d.; whereat the magistrates grumbled considerably.

A remarkable circumstance is mentioned by Mr. Hill, in his report on the prisons of Scotland, clearly shewing the unspeakable misery to which the indigent are reduced there, for want of a Poor Law. *In the prison at Glasgow, there are about fifty voluntary prisoners.*

These persons have committed no offence, and have spontaneously subjected themselves to all the rigour of imprisonment on the separate system, to obtain food and shelter.

"Some have been in this kind of civil death for more than a year, giving up every particle of personal liberty, performing a task of ten hours' labour every day, before they can earn a penny for themselves, living on very plain food, rising early in the morning both in winter and summer, and many of them confined day after day, and month after month, in a small cell apart from all human beings, except the officers of the prison; and this with the knowledge that at any moment they have but to utter a word, and they can be placed at perfect liberty."

A difficult question constantly arises in the economy of prisons, namely, how is order to be preserved in them? If prisoners are riotous and disorderly, tear their clothes, and refuse to do their

work, what punishment should be inflicted? The allowance of food is commonly so small, that it can rarely be right or expedient to diminish it. Of the remaining punishments, the principal ones are solitary confinement and whipping, either of which may be properly employed, if confined within due limits, but the former alone being applicable to females. The usage varies much on these points in different prisons, and it would be but just to make it more uniform. Thus in the Sixth Report we find that in the Bedford House of Correction the usual punishment for prison offences is confinement in the refractory [cell] or in the culprit's own cell, varying in length from four hours to one day. In one instance, however, three days in the "Refractory" were the punishment for destroying the prison clothes; and in another, a week's solitary confinement was inflicted for destroying the bed-clothes.

On the other hand, in some prisons, one, two, or three days' solitary confinement appears to be the common punishment for prison offences; nay, in the Northallerton House of Correction, we find three days' solitary confinement inflicted on *untried* prisoners for such offences as "talking several times," "talking and laughing constantly in the work-room."

No judicious person will deny that so formidable a punishment as solitary confinement, when protracted beyond a day, should be inflicted only by high authority, and that even then its limit should be defined by the legislature. Probably seventy-two hours would be sufficient in the worst cases, and should be reserved for the worst alone. Even when this punishment is inflicted by the sentence of a court of justice, three continuous days might be enough: the prisoner sentenced to three months' imprisonment might spend three days occasionally in solitude, and the rest of

his time in working under *surveillance* with his fellow-sufferers. But such a method should be strictly reserved by the legislature for heavy crimes, else it might be inflicted by country magistrates on offenders against the game-laws.

In whipping, the greatest diversity prevails throughout England. Thus, in Appleby County Jail and House of Correction, "corporal punishment is rarely inflicted: the only recent instances are of two boys who were flagellated with a rod."

At Northallerton, the whipping is generally two dozen lashes, or fewer if the surgeon thinks proper. At Beverley, the usual number is thirty; one of the scourges was thought too heavy by Capt. Williams, and was destroyed in his presence. In Kingston-upon-Hull Jail, the whipping is described as sufficiently severe, but not so as to incapacitate the sufferers from labour. Here, again, one of the scourges was destroyed in Capt. Williams's presence. The chief turnkey says, in his evidence, "never more than three dozen is given"; but it is scarcely clear from the context whether the punishment of boys or men is spoken of.

In the House of Correction for the West Riding at Wakefield, there is no flogging for breaches of discipline; and "whipping by order of court is generally inflicted on the day of discharge. The number of lashes is from thirteen to twenty-one. The higher number is given to those who are sentenced to be *severely* whipped."

In Derby County Jail, the number is generally forty lashes.

In Nottingham County Jail, the only punishment has been that of two boys with a birch rod.

Again, in the Southwell House of Correction (Nottinghamshire), a man received fifty lashes for refractory conduct; while, in the House of Correction

for the division of Lindsey, at Kirton, in Lincolnshire, the surgeon generally interferes after twenty.

In the Spilsby House of Correction for the division of Lindsey, in Lincolnshire, Capt. Williams informs us that the "whipping is described as being severe; it is inflicted by one of the turnkeys, in the presence of the surgeon. I examined the scourges, and recommended that they be of a less severe make."

It is needless to pursue this subject into farther details. In one place the usual number of lashes is 11, in another 25; and a writer in the *Times*, who had minutely examined all the Prison Reports with a view to this subject, found that in one jail the usual punishment was fourteen dozen lashes!

It is obvious that both the number of stripes, and the nature of the instrument with which they are inflicted, should be fixed by authority. It is impossible, perhaps, in the present half-civilized state of society, to dispense entirely with the scourge; but it is absurd and unjust that the punishment for the same offence should vary from a school-boy flogging to a military laceration, according to the whim of eastern or western magistrates.

ST. GEORGE'S HOSPITAL.

Successful Operation for Strangulated Hernia, at the age of 107!

We do not know that there is any record of the performance of a severe operation at the advanced age of 107, which has, however, been performed by Mr. Cæsar Hawkins, with success, in St. George's Hospital; and we apprehend there is no doubt of the patient's real age, as the certificate of his birth has been preserved by his friends, one of whom came with him to the hospital, and asserted that he had seen it. The patient is, moreover, well known as a musician, who had the honour, as he expresses it, of playing on the violin with his late Majesty, George the Fourth. His name is Rochard, a French-

man, and his faculties are quite entire; he was able to walk into the ward, and within these few days was strong enough to walk from Bayswater to Charing Cross, and back again.

This man came to the hospital about one o'clock on Thursday last (Nov. 24th) with strangulated inguinal hernia, which had been fixed from, at least, the previous morning, and perhaps for a longer time, as no motion had passed for three or four days: the tumor was hard and tender, and vomiting had repeatedly taken place, but the countenance was cheerful, and the pulse unaffected.

While some other operations were being performed, Mr. Hawkins informed the students of the case having been admitted, and said that two attempts to reduce the hernia had been made before his admission; that the muscles being at his age completely relaxed, the only remedy likely to be useful was the application of ice, which he thought not unlikely to diminish the size of the tumor enough to enable it to recede, and that as the symptoms were not severe, and were generally slow in their progress at an advanced period of life, he would give him this chance, and see him again at five o'clock. When Mr. Hawkins came, however, at this period, he found that although there had been no sickness, yet the tumor was rather more tender, and therefore proceeded at once to the operation. The sac was very thick, and on opening it a mass of apparently transparent jelly protruded, which was a considerable quantity of recent lymph, distended with the serum, which filled the sac: the contents were a few inches of inflamed small intestine glued together and to the sac by lymph, which Mr. Hawkins was obliged, after dividing the stricture, to tear away from the bowel in order to reduce it. The case went on very well afterwards, and requires no particular notice;—evacuations were passed the next day, after an injection;—some slight tenderness of the abdomen was relieved by chamomile poultice, and by one or two doses of calomel on the Saturday. The wound united entirely by the first intention, except where two ligatures had been applied to a divided vessel of the outside of the sac, which part was slightly opened by the probe: the last section was removed on Sunday, and on Wednesday, the 30th, we saw him sitting up in a chair. We may observe that nourishment was given him from the first, and a little wine the last day or two; he is rather weaker since the strangulation, but appears to be going on quite satisfactorily.

Dec. 7.—Continues to go on favourably in every respect; in fact, he may be regarded as having entirely recovered.

THE MARYLEBONE INFIRMARY.

Sloughing of the scrotum.—Case of popliteal aneurism.—Curious case of femoral hernia.

J. T., aged 52, was admitted into the St. Marylebone Infirmary, under the care of the physicians, with symptoms of cerebral disturbance. He had, on a previous occasion, been under treatment with similar symptoms. On the third day after admission it was accidentally discovered that there were gangrenous spots on the scrotum.

On the day these sloughs were discovered he was sent down to a surgical ward, and was seen by Mr. Phillips, who found him heavy, stupid, and unable to give any information as to the sensations he had experienced, or as to the time when inflammatory action had set in. He was carefully examined: the scrotum was very tumid, of a dusky red colour, tense, and three or four times its natural bulk, with two sloughs, each larger than a shilling, and of a dark colour, at its most depending part; the perineum was equally red, equally tense, and presented all the appearances of infiltration of urine. His own account of himself did not make it very evident whether he had made water on that or the previous day, or whether he had stricture. A No. 4 elastic gum catheter was passed without much difficulty into the bladder, and about two ounces of high-coloured urine dribbled away through it. This circumstance made the nature of the case more doubtful; but still the course of action was sufficiently clear. Two longitudinal incisions were made alongside the raphé—they were deep enough to pass through the superficial fascia; and similar incisions were made through the tegument of the scrotum. Through these incisions a quantity of urine-like fluid escaped, tinged with dark venous blood: it amounted, in six hours, to upwards of a pint. Warm fomentations were kept applied upon the parts, and he expressed himself as much relieved. Gin and water was ordered for him; but he died comatose on the succeeding day.

He was examined after death. The cerebral symptoms were accounted for by the existence of softening, and considerable effusion under the membranes of the brain: the bladder and urethra, together with a portion of the pubis, were removed, and the parts were very minutely examined. The bladder was moderately healthy, the urethra quite so, and there was no breach of surface at any part of its course. During life, Mr. Phillips expressed an opinion that the head symptoms, for which he was sent to the physicians' ward, might have been a con-

sequence of urinary disease; but then the little urine contained in the bladder after death was not albuminous, and it is clear that there was no retention to account for the cerebral disturbance. It subsequently appeared that on a previous occasion he had been treated for cerebral disturbance, and no doubt the same condition had rendered him so indifferent about the perineal mischief, as only to have directed attention to it on the day on which he was placed under Mr. Phillips' care.

The affection in question has been described by Mr. Liston, in a paper contained in the Transactions of the Royal Medical and Chirurgical Society, as an "acute form of anasarcaous tumor of the scrotum:" whether the disease does not come more nearly under that condition known as erysipelas phlegmonodes, may be matter of question. In Mr. Liston's cases there had been some local injury to excite it; in one case an abscess near the verge of the anus; in another a kick on the perineum by a cow; in another inguinal fistula; in another a gun-shot wound, and the infiltration was principally confined to the scrotum.

In the present case the infiltration extended along the perineum into the tissues of the scrotum, and sloughing had followed, while there was no apparent exciting cause.

Popliteal aneurism.

—Daly, æt. 53, was admitted into the St. Marylebone Infirmary with a diffused popliteal aneurism on the right side, which had already produced some oedema of the right foot. His account of it was, that he had discovered a swelling in the ham three weeks before admission, that it had rapidly increased in size, and become very painful, especially at night. There was so much general irritability, and so much arterial action, that it was thought advisable to delay the operation for a few days, in order to try the effects of such means as were likely to improve his condition with reference to those symptoms. For some days, the treatment employed for this purpose (namely, careful diet, quiet, and digitalis) had a decidedly good effect, but the pain in the ham, after that, increased, as well as the girth of the limb. Under these circumstances it seemed unwise to delay, and the patient did not object to the operation, but when all was prepared, his courage failed him, and no persuasion could move him to submit to it. Several days passed, the pain increased, the size of the limb also, as well as the oedema; and he then proposed that the operation should be performed. Lest his courage should ooze away again, the operation was at once proceeded with, though the circumstances were any thing but favourable—an habitually intemperate man, with gene-

rally excited arterial action. When laid upon the table, the femoral artery appeared to be very superficial, for its pulsation could be perceived from Poupart's ligament to near the edge of the sartorius muscle. An incision of the usual extent was made, but it was found that instead of being so near the surface as had been supposed, the artery was deep-seated. At the edge of the sartorius muscle Mr. Phillips perceived an artery about the size of the facial, under which he passed an aneurismal needle, upon which it was raised, and while so separated from surrounding parts Mr. Samwell and Mr. Stafford satisfied themselves that it was an artery. A ligature was drawn under it, but for the moment it was not tied. Before the sheath was opened, another artery of the same size as the former was discovered, and treated in the same way. The sheath was now opened, and a ligature placed around the femoral trunk, which was of large size. The latter ligature was tightened, and the pulsation in the tumor cut off. The branches were then carefully looked to; one of them was found to arise from the femoral, about half an inch above the sartorius; the other arose somewhat higher, and apparently from the profunda. A question then considered was, whether the common trunk should be tied above the points where those arteries were given off, supposing both to arise from the femoral trunk, or whether those two branches should be secured by the ligatures already around them. Seeing that the artery was tied, seeing the uncertainty of both being given off from the femoral, and seeing, further, that it was uncertain how near we might be to the profunda, Mr. Phillips at once secured those two branches. The wound was brought together by sutures, and covered with wet lint; the patient was put to bed, and the state of the limb was fully noted for six hours, but there was no sensible change of temperature, neither was there during the succeeding days: this was probably owing to the size of the tumor and the condition of the artery, which had already interfered so far with the circulation as to establish it in the collateral channels. The patient's suffering was lessened from the moment of the operation; the pain in the tumor was dissipated, and in forty-eight hours his general condition, and his countenance, were much improved; but the irritability of the pulse, and the excited action of the heart, underwent little change until the third day, when he began to take meat and beer. At this time there was only one thing to create uneasiness, and that was the large quantity of blood effused at the ham and the upper part of the calf. On the eighth day there was heat, and some redness, apparent at that part, and evaporating lotions were applied, but they did not remove

it. On the eleventh day fluctuation was evident, produced, it was supposed, by the breaking down of the coagulated blood: for the purpose of testing this an exploring needle was passed into the ham, and some dark, red, thin, bloody fluid escaped, containing, as was conceived, pus. It was examined under the microscope, and pus globules were found in it. Two incisions were then made to allow of the escape of this fluid, but the quantity poured out was not great; a poultice was applied to the part, and as the mass broke down it escaped. The irritation set up at the point by the breaking down of so large a mass was great, and it ended in gangrene; the region being in a very apt state for such a termination, from the unsatisfactory state of the circulation there. The gangrene extended, spite of all the means used for arresting it, and spite of the stomach bravely bearing up; and the only question still open was that of amputation above the knee; but as the man's general condition was unfavourable, as the gangrene was spreading, and as the circulation immediately above the knee was not satisfactory, and as a similar state of things might be produced on the stump, it was determined not to propose it. As the discharge from the leg was becoming profuse and foetid, a lotion of decoction of bark and chloride of lime was substituted for the poultice. Much was hoped from the integrity of the stomach, which allowed of his taking two chops, four ounces of brandy, and six ounces of wine, daily, but this only postponed the fatal termination, which did not occur until the forty-third day after the operation. The first ligature came away on the ninth day, the second on the thirteenth, and the third not until the thirty-first day.

Being an Irishman, no facilities for making a careful examination were afforded; the artery at the part where the ligature was applied, as well as the parts from the ham, were removed, but they were so broken down by gangrene that nothing could be made of them.

Strangulated Hernia.

An old woman, aged 73, was admitted into the Marylebone Infirmary, under the care of Mr. Phillips, with strangulated hernia. The history of this case shewed that the symptoms of strangulation had been present eight or nine days, though they had not been very pressing; there had been no stool for eight days. Upon examination after admission, the tumor, which was not large, was found to occupy the right femoral region. There was not much tenderness at the point, nor at any part of the abdomen; there was very slight tympanitis; there was some nausea, and occasional vomiting, but not severe. The tongue

had a slight coating; the pulse was 84. Mr. Phillips pointed out that in people advanced in life it is often not prudent to wait for more decided symptoms, because the powers of life are incapable of developing them; and because it is matter of observation that they often die with symptoms which, according to the language of works on surgery, would not warrant a recourse to operation.

As it was ascertained that the taxis had been employed for an hour and a half on the previous day, it was not thought prudent to persevere long in any further attempt at reduction, and the operation was at once had recourse to. An incision was made in the usual way, and the approach to the sac was cautiously made. A tumor, apparently omentum, and much larger than a pullet's egg, was exposed; it was invested by a membrane which was conceived to be the sac: this was opened, and the director being placed under it, it was incised upwards and downwards to such an extent as was necessary. The omentum-like mass was now fairly seen; it was very vascular, and a large number of veins on its surface appeared so tortuous as to give the impression that they were varicose. The tumor was turned up, but no intestine could be discovered under it: there was no reason to doubt that it was an omental hernia. A director passed very easily under Poupart's ligament, and the opening was enlarged to the necessary extent. The tumor was then readily passed back under the ligament. Dr. Boyd and one of the assistants passed their fingers under the ligament, and were satisfied that the reduction was complete. The lips of the wound were brought together by suture, and it was ordered that the patient should be left without medicine for six hours. At that time, as there had been no stool, the house-surgeon ordered a common enema, which brought away a certain quantity of fecal matter. In the night she took three grains of calomel, to be followed in the morning by a beef-tea injection: they brought away a little more fecal matter, but stercoraceous vomiting came on, and in the course of the day she sank.

The body was examined fourteen hours after death. There were very slight traces of peritonitis. The examination was then confined to the neighbourhood of the disease. The tumor had again protruded, and a portion of intestine was involved in it: five or six inches of intestine on either side of the part implicated were removed, together with the tumor, and the following state of things was revealed. The tumor was very condensed and very vascular, having much the appearance of inflamed omentum; it was surrounded by a tolerably dense investing membrane. Into the centre of this tumor a knuckle of intestine passed to the depth of rather more than an inch and a quarter, and on every side

the intestine was surrounded by fat to the depth of more than a quarter of an inch: the pressure upon any part of the intestine did not appear to be great; there was, however, considerable thickening of the peritoneum at the proper neck of the sac, which was hard and unyielding. The intestine was adherent to the sac, as was the sac to the fatty mass. In this case, to which Mr. Phillips knew no parallel, it would seem that the fatty tumor must have been seated in very immediate relation with the femoral ring, probably blocking it up, and that when the protrusion of intestine took place, rather than give way, the tissue of tumor had admitted the intestine to pass into its centre. Of course the proper sac was not opened, and indeed could not have been got at without cutting down half an inch into the tumor.

ACCOUNT OF A
NEW PERCUSSION INSTRUMENT
FOR INVESTIGATING THE DISEASES OF
THE CHEST.

By C. J. B. ALDIS, M.D.

Being an Extract of a Lecture delivered
Nov. 28, 1842.

THE subjects of percussion and auscultation are of great importance; for by employing these methods of diagnosis you will be able to distinguish with precision various diseases of the chest, and by their neglect some important lesion of the lungs may be overlooked, which it will be your duty to endeavour to detect, in order that you may apply the appropriate remedies. Besides, when you recollect the frightful ravages which pulmonary affections make among mankind, a fact rendering such diseases of the highest importance, I need scarcely say more to stimulate your attention to these means of diagnosis. I therefore hope that you will reflect upon the value of percussion and auscultation, the former of which will occupy us in the present lecture, and continually practise them.

Method of percussing.—Some practitioners percuss with the fingers of the right hand, their extremities being in the same line, and in a state of demiflexion, striking the chest in a perpendicular direction. Others employ four fingers of the right hand to strike the fingers of the left hand applied to that part of the chest under examination. Piorry invented the plessimeter, a round piece of ivory, to be placed on the chest and struck by the fingers, for the purpose of preventing the pain likely to be felt by some persons when the parietes of the chest are percussed. Subsequently a light hammer, having a leathern face, was brought into notice, the ivory plessimeter being

struck with it by the right hand. More recently another instrument has been introduced: a handle is attached to the plessimeter, which is struck by a hammer held in the right hand.

Although percussion may seem a very simple operation, still it requires much practice, and many precautions are to be attended to. Now it is very requisite that you should produce equal sounds in comparing the opposite sides of the chest, for the slightest inequality in percussing will produce a difference in sound; and even on examining one side of the chest, we cannot place much reliance on unequal sounds.

About five years ago I constructed a rough model of an instrument in wood, with

a hammer attached to it, having a spring handle, to be raised by the right hand; but I abandoned it in consequence of being in the habit of percussing the chest with my fingers. More recently, however, I made an outline of this instrument on paper, and thought that, by means of a regulator, its elevation might be so managed as to produce uniform sounds; for, on raising the hammer, it falls immediately the spring handle touches the regulating screw, which is moveable when it may be desirable to effect a greater or less elevation of the hammer, in order to produce greater or less uniform sounds. Messrs. Philp and Whicker, late Savigny, of St. James's Street, made the instrument for me.



The plessimeter (see engraving) is made of leather, moving upon a swivel to adjust itself to the part. The percussor is attached to the stem of the plessimeter, and acts

upon a joint. By pressing down the handle of the percussor, the spring throws the percussor down upon the plessimeter, the force of the blow being regulated by a screw.

CONSTIPATION FOR FORTY-FIVE DAYS.

DR. JAMES JOHNSON related the following case, which had terminated fatally that day. The patient, a medical man, about forty-five years of age, had resided in London about eighteen months, with the intention of practising there instead of in the country. Until forty-five days ago he suffered only from occasional spasms of the bowels, the spasms having nothing peculiar in them. His bowels were regular. During the last forty-five days of his life there was no evacuation whatever from the bowels, although every means had been resorted to by Mr. Lane and Dr. Sims to produce such action. About a fortnight before death he (Dr. Johnson) joined in consultation. The patient had then severe spasmodic pains in the abdomen, with almost constant vomiting. His stomach seldom retained anything: the ingesta being either brought up immediately, or two or three hours after being swallowed. None of the matter, however, vomited up, exhibited the slightest stercoraceous character. To afford relief, croton-oil, bleeding, and croton-oil injections, were used, among other means, and Dr. O'Beirne's tube, which, however, could not be passed up any distance, and seldom more than half a pint of fluid, and never more than a pint, could be injected. During the whole of this time the distension of the bowels increased, and his extreme

sufferings were only occasionally relieved by the internal use of opium, and by opiate frictions over the abdomen. Five days before death, at his own urgent request, half a pound of fluid mercury was administered to him. This produced no perceptible effect at the time, but the next day he was seized with spasms in the abdomen. The constipation remained. On one occasion his agony from the distended abdomen was so great that he begged it might be punctured to give him relief. He died on that morning at eight o'clock, and at four in the afternoon of the same day the body was examined. The tympanitis was enormous. On opening the abdomen there were scarcely any signs of inflammation having existed; there was no effusion, and the convolutions of the intestines were not adherent to each other. The dilatation of the intestines was very great; the colon was as large as the colon of a horse, and the other intestines were of proportionate magnitude. The diaphragm was thrust up to a remarkable height, and the stomach was so contracted that it was discovered with difficulty. The gall-bladder contained a few drachms of bile. On following the intestines nothing was discovered but wind. Not the slightest trace of the quicksilver which had been swallowed five days before could be seen, but in the sigmoid flexure of the colon was a dark, tarry-like substance, having a very peculiar odour, but neither in appearance nor in smell like a fecal collection. No globules of mercury could be

detected in it. The cause of the obstruction was found at the junction of the sigmoid flexure with the rectum, in which situation was a dense white scirrhus, surrounding the intestines for the space of three-quarters of an inch, and so completely closing the passage, that although the colon above was enormously distended with flatus, not the smallest quantity of air could be made to pass the stricture. The case was remarkable, from the cause of the forty-five days' constipation being *disease*. When constipation was a habit the bowels might be inactive for a longer period, but he (Dr. J.) had never before known such protracted constipation dependent on disease. The longest period, under such circumstances, that he had witnessed, was eighteen or twenty days at most. It was curious that no sign of the quicksilver, beside that mentioned, could be discovered. He suspected that during the five days that the mercury was in the intestines it had been converted by their convulsive action into the ointment-like substance referred to. It was also singular that the mercury produced no effect on the mouth or breath. Another remarkable circumstance was the absence of difficulty in passing the motions until the setting in of the constipation. The scirrhus must have been going on for years.—*Lancet*, Nov. 26.

ON THE
MORTALITY OF CHILDREN
AT THE
MILITARY ASYLUM, SOUTHAMPTON.

THE Royal Military Asylum was founded for the reception of the orphans of soldiers, and the branch at Southampton was opened in October 1817, for the reception of the younger male children of the parent institution. In 1825, the boys were removed to head quarters, and the institution at Southampton was exclusively appropriated to girls and to boys under seven years of age. In 1835, the admissions were greatly restricted, with a view to the ultimate abolition of that branch of the asylum, and the few remaining children were ultimately removed to Chelsea in November 1840.

For a period of eighteen years, from October 1817 to October 1835, there were admitted 5,427 children, and during that period there occurred in all 39 deaths—viz. from tuberculous disease, 11; measles, 11; hydrocephalus, 4; convulsions, 4; whooping-cough, 3; fever, 2; diarrhoea, 1—Total, 39. A fraction more than one-third of the whole died of tuberculous disease, and one-half of these before the fifth year, the other half between the ninth and sixteenth—corroborating the opinion of Andral, who, from his extensive experience, remarks that tubercles

are most prevalent from the first to the fifth year; that they appear in much greater quantities, and in a greater number of organs at once: and that more than one-fourth of those who die from birth to puberty are affected with tuberculous disease. As the tendency of this disease appears to be the consequence of imperfect assimilation, there can be no doubt that we are possessed of the means of correcting this predisposition in many instances. Of this fact I have had abundant experience among the children of the Military Asylum. Few of the children, on joining this institution, were exempt on their admission from a tendency to tuberculous disease, which may reasonably be attributed to privations of different kinds, neglect, deficient nourishment, &c. &c. The great majority of the children, on their admission, and many for a long period afterwards, exhibited a strong tendency to struma, evidenced particularly by a disposition to a congestive state of the abdominal contents, impaired powers of digestion, depraved secretions, dry, harsh skin, and a tendency to eruptions, and ophthalmia (especially denominated strumous). Whilst under the ordinary circumstances of children of the same class, it has been calculated that five-sixths of those affected with tuberculous disease perish, it is a gratifying and a very important fact, that by placing children under circumstances the most favourable to health, as regards food, air, clothing, and exercise, the constitution becomes so improved as to overcome this predisposition, and, as we have seen, only fourteen cases of tuberculous disease proved fatal amongst 5,427 children of all ages.—*Dr. Hennen, in the Provincial Medical Journal*.

LITHOTOMY AND LITHOTRITY.

THE *Gazette Medicale* of November 19th contains an account of the operations for stone performed for some years past at the Hôtel Dieu, by M. Roux.

From 1836 to 1840, both inclusive, he performed lithotomy eighteen times; eleven patients were cured, and seven died.

He operated by lithotrixy in six cases. Three patients are said to have left the hospital, and three are reported to have left it cured.

Of these twenty-four patients, the ages were as follows:

From 3 to 25 years of age . . .	13
„ 25 to 50	3
„ 50 to 75	8

24

In the year 1841, seven patients suffering from stone were put under M. Roux's care. Six of these were operated on; four, namely,

by lithotomy, and two by lithotrity. The seventh patient was a little girl of 11, who had an enormous calculus; the very day of her admission into the hospital she sank under a diarrhoea, which had reduced her to the last stage of marasmus.

This year was the most fatal to calculous patients; for of six who underwent operations, five died: one of those on whom lithotomy was performed got well.

In one case, where a stone weighing 57 grammes, (1010 French grains) had been extracted by lithotomy, another weighing 62 grammes (1116 French grains,) was found on dissection; besides three of the size of a hazel nut, which were lodged in cysts.

In one of the lithotritized cases, it was found that a false passage had been made by grazing the tissue of the prostate with the *brise-pierre*.

TREATMENT OF MELANCHOLY.

EXERCISE, in whatever manner it is taken, is, without doubt, one of the greatest resources in combating melancholy; travelling, which acts on the brain by impressions, causing a crowd of images, and ever-new ideas, to pass before the understanding, necessarily destroys that fixedness of thought, that concentration of attention, which makes us lose all hope. Those patients who cannot travel must be exercised and diverted by excursions on foot, or in a carriage, by bodily exercises, by cultivating the ground, by the care of a garden, by household occupations, and by the practice of any profession. Riding on horseback excites the activity of the abdominal viscera, and favours insensible perspiration, while it lulls and diverts the attention. Good results are obtained from driving. The English struggle against the spleen by taking the place of their coachmen, and thus passing through the streets of London; the celebrated Alfieri rendered his dark melancholy supportable by this means alone. Sporting may fulfil the same object; but we must be cautious in trusting arms to those who are disposed to suicide. Pinel expresses the wish that every asylum for the insane should be near a farm, where the patients may cultivate the ground. Dr. Langermann had almost realized this wish at the Bareuth Asylum, where he was physician.

Dr. Horn has provided the insane patients in the hospital at Berlin with all the means of exercise compatible with their safety, and he derives great advantage from it. At the Salpêtrière, a considerable number of our insane women are occupied in sewing, knitting, and other manual work, and several are employed in the service of the house. These active occupations have their share in the

numerous cures obtained in this establishment. It is not so easy to furnish men with the instruments of work, because they may misuse them. Persons who have not been accustomed to employment, if it is impossible for them to travel, ride on horseback, or go in a carriage, should play at games which repose the mind and fatigue the body; such as battledore and shuttlecock, tennis, football, billiards, &c. But exercises of the mind must be joined to those of the body. Study contributes to cure the melancholic, provided it is not directed to subjects fitted to inflame the imagination. Sometimes, also, we give way to the melancholy ideas of him whom we wish to cure. M. Charpentier, in his excellent thesis on melancholy, relates that an ecclesiastic, who had become melancholic, with a propensity to suicide, in consequence of the revolution, was rescued from this state by the activity which he manifested in defending the Concordat, which was favourable to the independence of the ministers of religion.

A man was persuaded that his enemies had stripped him of all his fortune; i.e. became melancholy and morose, and refused to eat, because he had nothing with which to pay for his food: he was sent to Paris. After the lapse of some months, I advised one of his relations to feign a law-suit, and to persuade the patient to consult an advocate. The lawyer, previously instructed, asked for a written memoir, in order to be better acquainted with the state of the business. After some days' hesitation, the patient began a long memoir, which obliged him to go backwards and forwards several times, and even to undertake short journeys. A month had hardly passed, and the memoir was not finished, when it was clear that the disease was approaching a cure, which soon took place. M. Alibert relates a similar case. — Esquirol, *Des Maladies mentales: De la Lypémanie, ou Mélancholie*.

INSECT ORIGIN OF SMALL-POX.

By M. SERRES.

At the Institut, on the 4th of July, M. Serres mentioned the following fact, seeming to favour the hypothesis of animalcules in small-pox. By covering each pustule with a glass capsule, which is kept for some days in its place, he has seen the process of eruption either go on, or languish, or be completely abortive, according as the glass was transparent or more or less opaque. This influence was evidently due to the contact of the air. [Qy.—Should not this be the admission of light?] The experiment, he adds, was not merely curious, for it led to a modification of some of the hygienic mea-

sures adopted in small-pox. Previously, patients were generally placed in situations as well aired and lighted as possible; but now, one knows that dark situations are far better for this kind of disease, and that this change alone is enough to ensure the most favourable progress of its evolution. The success at La Pitié was never more complete than during one year when all the patients with small-pox had, of necessity, to be put into a low, ill-aired, dark ward—a sort of cellar. The confluent cases there went on as favourably as was possible. At present, in the same hospital, they are moved from the first floor into the *rez-de chaussée*, and they do well there.

M. Serres took this occasion to mention that he had seen between 1700 and 1800 cases of small-pox in private and in hospital practice, and that he was certain that the number of those affected with small-pox after vaccination was not greater than that of those who had small-pox twice. [For the first of these statements M. Serres may have made it probable, as our old physicians believed, that it is beneficial to exclude the light in small-pox; but there is no evidence that ill ventilation is to be desired.]—*Gazette Médicale*.

ON THE LOCAL EMPLOYMENT OF CALOMEL IN OPHTHALMIA NEONATORUM.

By M. LAUER.

THE introduction of finely-powdered calomel into the eye in ophthalmia was originally practised by Dupuytren. Professor Fricke of Hamburg has noticed, in his *Zeitschrift* for 1837, the violent reaction which its employment excites in the case of persons who have been taking iodine, probably owing to the formation of an iodide of mercury. About a year since Dr. Kluge began to use it as a local application in the cases of ophthalmia of new-born infants which came under his care in the lying-in department of the Charité at Berlin. The results were extremely fortunate, and Pr. v. Siebold of Göttingen, who was induced to try the remedy, has obtained from its employment very great success.

The manner of introducing the calomel into the eye is by means of a camel's hair pencil loaded with the powder, which is shaken from it into the eye, while an assistant separates the lids. In the treatment of the ophthalmia neonatorum this remedy may be had recourse to as soon as the first traces of the disease appear, and its employment once daily is then in general sufficient. After the lapse of from half an hour to two hours, according to the quantity of the secretion,

the eye may be washed from the powder, and the ordinary rules as to cleanliness be attended to. In severe cases the application may be repeated twice every day; but when the disease is mild a single application daily suffices to effect a cure in from four to ten days, if the remedy had been had recourse to from the outset. The more severe and intractable forms of the disease do not appear to have been benefited by the local employment of calomel.—*Medicinische Zeitung; and Brit. and For. Med. Review*.

FATTY AND CELLULAR DEGENERATION OF MUSCLE.

By DR. JOSEPH ENGEL.

ACCORDING to Gluge, the fatty degeneration of muscle consists in the deposition of fat, partly in a free, partly in an encysted state, between the primitive muscular fibres. The author is of opinion that the above is not the only metamorphosis which takes place, but is not able to persuade himself that an actual transformation of muscular into cellular tissue is to be admitted. So long as muscle, examined by the microscope, undergoes no other alteration than a mere change of colour, the form of the primary and secondary muscular bundles remains unaltered, except that their sheaths appear covered with a greater number of granulations, the greater part of which, however, are readily removed by a slight pressure. The sheath itself of the fibre appears more brittle and easily ruptured than before; the least pressure destroys its continuity. In the same proportion in which the fatty condition of the muscle and its loss of colour become apparent to the naked eye, do the longitudinal lines of the muscular bundles become more evident, the granulations more numerous, and the bundles themselves appear covered with a multitude of large bladders of fat, which, from becoming flattened, present various forms, and are at length united, partly with each other, partly with the bundles of muscular fibres, by a tolerably adhesive substance. The author failed to detect fat in a free state in fresh muscle; which, however, if treated with spirit of wine, gives out fat in notable quantity. Yet in this case the fat seems to be simply extracted from the sebaceous bladders or cysts by the action of the spirit of wine; these cysts, thus deprived of their contents, being visible, in a shrivelled state, between the bundles of muscular fibre. Water causes the fat to solidify, and to appear surrounding the muscular bundles like a sheath, from among which, by a slight pressure, it may be forced in the shape of half cylinders. The muscular bundles amid this deposition

of fat, partly free and partly encysted, lose entirely their sheaths; so that their delicate fibrillae (primitive fibres), after the fat being washed away, lie bare. This condition, and no other, it is which constitutes the so-called degeneration of muscle into fatty and cellular tissue, and which consists of nothing but a deposition of fat between the bundles of muscular fibres deprived of their sheaths. The sheath of the muscular bundles appears to be indispensable to elasticity, firmness, equal action, and vital function of muscle. Whether the change of colour which supervenes after some time in separated muscle be owing to the loss of the sheath, the author is not prepared to say. A question arises, whether the destruction of the sheath of the muscular bundles be owing to the deposition of fat, or whether the converse relation be the real one, or, finally, whether both changes be synchronous results of a common cause.—*Oesterreich. Medicinische Wochenschrift*; and *Brit. and For. Med. Review*.

APPARENT DEATH BY LIGHTNING.

By DR. HARTMANN, of Neu Ruppin.

THREE persons were at the same instant struck by lightning. In one the symptoms were severe and remarkable. He was a healthy man of twenty-six. When the author saw him, an hour and a half after the stroke, he lay completely unconscious, as if in apoplexy. His pulse was less than 60, full and hard; his respiration snoring; his pupils dilated and insensible. There were frequent twitchings of the arms and hands; the thumbs were flexed and immovable, and the jaws firmly clenched. Soon after the author arrived severe clonic spasms came on, so that four men could scarcely hold the patient in his bed; and his body was drawn to the left side. As soon as these had relaxed he was bled to 16 oz., cold was applied to the head, a blister to the nape, and mustard poultices to the legs. Stimulating enemata and opium were also administered; and in the course of twenty-four hours the patient's consciousness slowly returned, and he was soon completely recovered. The only external injury discernible was a red streak, as broad as a finger, which extended from the left temple over the neck and the sternum, to the precordial region, and which disappeared completely in a few days.—*Ibid*.

LITERARY NOTICE.

In the press, *Lectures on the Principles and Practice of Physic*, delivered at King's College, London, by Thomas Watson, M.D., Fellow of the Royal College of Phy-

sicians, Physician to the Middlesex Hospital, and formerly Fellow of St. John's College, Cambridge.

ROYAL COLLEGE OF SURGEONS.

LIST OF GENTLEMEN ADMITTED MEMBERS.

Friday, December 2, 1842.

J. O'Hea.—T. Morgan.—D. M. Aitken.—J. Dwyre.—J. G. Rusher.—H. B. L. Brock.—T. Bishop.—G. Tweddell.—C. J. Farr.—G. E. M'Laughlin.—J. R. King.—J. H. Gramshaw.

A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, November 26, 1842.

Small Pox	8
Measles ..	34
Scarlatina ..	43
Hoooping Cough ..	12
Croup ..	9
Thrush ..	4
Diarrhoea ..	4
Dysentery ..	3
Cholera ..	0
Influenza ..	1
Typhus ..	24
Erysipelas ..	5
Syphilis ..	0
Hydrophobia ..	0
Diseases of the Brain, Nerves, and Senses ..	139
Diseases of the Lungs and other Organs of Respiration ..	264
Diseases of the Heart and Blood-vessels ..	7
Diseases of the Stomach, Liver, and other Organs of Digestion ..	58
Diseases of the Kidneys, &c.....	10
Childbed ..	10
Ovarian Dropsy ..	0
Disease of Uterus, &c.	1
Rheumatism ..	3
Diseases of Joints, &c.	1
Ulcer ..	1
Fistula ..	0
Diseases of Skin, &c.....	1
Diseases of Uncertain Seat ..	112
Old Age or Natural Decay ..	68
Deaths by Violence, Privation, or Intemperance ..	16
Causes not specified ..	2

Deaths from all Causes 853

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude $51^{\circ} 37' 32''$ N.
Longitude $10^{\circ} 3' 51''$ W. of Greenwich.

November. THERMOMETER. BAROMETER.

Wednesday 30	from 37 to 47	29.54 to 29.86
December.		
Thursday . 1	27 53	29.94 29.96
Friday . . 2	55 47	30.00 30.06
Saturday . 3	30 51	30.01 30.24
Sunday . . 4	58 51	30.32 30.30
Monday . . 5	40 47	30.22 30.17
Tuesday . . 6	37 40	30.14 Stat.

Wind, S.E. and S.W. on the 30th ult.; S. on the 1st and 2d inst.; S.W. on the 3rd; N. by W. and S. on the 4th; S. by W. on the 5th; and S.W. and S. by E. on the 6th.

Generally cloudy; a little rain on the 1st and 2d instant.

Rain fallen, .035 of an inch.

CHARLES HENRY ADAMS.

WILSON & OOLIVY, 57, Skinner Street, London.

THE LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, DECEMBER 16, 1842.

LECTURES
ON THE
PRINCIPLES AND CLASSIFICATION
OF DISEASE,

Delivered at St. Thomas's Hospital,

By THOMAS HODGKIN, M.D.

Lecturer on the Theory and Practice of Medicine
at St. Thomas's Hospital School.

At the conclusion of the preceding lecture a defined case of derangement affecting the hand was described to you, which served as an example of local disease—of the natural tendency to restoration brought about by what is called the *vis medicatrix naturæ*; and we have seen, that this local form may also lead to constitutional derangement, in which the disturbance of the system does not bear a direct relation to the functions of the part, as is the case when we have symptoms produced by interference with respiration or circulation. The symptoms of the constitutional disturbance might have been equally produced by the derangement of any other part. There are still many other considerations which claim our attention, without special reference to the function of the organ affected; we will therefore still keep to the case of disease in the hand. If we merely consider the variety of derangements of which this part may be the seat, we shall find that there are varieties in the phenomena which it is of great importance to attend to, depending upon the tissue composing the part to which the affection *particularly* belongs. Other variations are dependent on the causes of derangement, and others on the state of the person in whom they occur. It is to each of these in succession that I now invite your attention. The derangement may be merely on the surface, and affect the skin, and consequently be attended with considerable pain or uneasiness in consequence of the ample

supply of nerves; and even this uneasiness may vary in its character with the severity or depth of the derangement, so as to cause either burning or smarting pain, or the most annoying itching, a mere unpleasant tingling, or a great number of intermediate sensations, each, however, characteristic of the part affected. The kind of constitutional derangement, if it exist, will also be influenced by the tissue. Let us suppose the injury to be in the cellular membrane beneath the skin; this will probably lead to swelling and tension; a pain of a different kind will be felt; and it will frequently be accompanied by throbbing, perceptible to the patient and others in consequence of the resistance afforded to the arterial circulation. A greater degree of constitutional disturbance is likely to be produced than the extent of visible derangement might have led one to anticipate *à priori*; and frequently, even in the course of a few days, or even a shorter period, a new material, foreign to the part, and even to the system in a state of health, is often produced. This material, which is called pus, and is one of the most remarkable results of inflammation, is more particularly prone to be formed as a consequence of the derangement of cellular membrane. Its formation, in most parts, is accompanied by some peculiarities in the constitutional disturbance, of which rigors are perhaps the most remarkable.

The derangement may be yet more deeply seated; the sheaths of the numerous tendons entering into the composition of the hand, and the fluid which in health lubricates their internal surface, may become increased; the swelling produced by this cause, if simple, will not only be peculiar in its character and situation, but in the kind of uneasiness which attends it. It may have been produced slowly, and be accompanied with little or no pain; or it may have come on acutely, as in rheumatic affection, and be chiefly felt when any, even the slightest, attempt at motion is made; or it may have proceeded from injury,

by which the naturally close cavity formed by these sheaths has been opened. The symptoms dependent on such an injury, in the infliction of which scarcely any pain may have been experienced, may be of the most severe character, and prove rapidly fatal. I remember a case in which a tendinous sheath was carefully opened with a lancet, to allow the escape of the morbidly increased quantity of synovia, intermixed with numerous little loose bodies which had been formed in it. The operation, which at the time seemed very trivial, was as quickly followed by the most urgent symptoms: not only the whole hand became inflamed, but the constitutional derangement was so severe that the patient died in a few hours. Such serious consequences, in this and numerous similar cases, are referable to the particular tissue which becomes the seat of derangement; and we are consequently led to expect them whenever an extensive tendinous sheath, or the synovial capsule of a large joint, has been opened. But it may happen that the tendon enclosed in the sheath has suffered more than the sheath itself. This dense and feebly organised structure is but little sensitive to injuries which it may receive at the time of infliction, yet very severe pain may be felt where this structure has become inflamed. From its situation, however, we do not often see the affections of this structure in a simple uncomplicated form, which must be borne in mind in noticing both the local and constitutional disturbances which attend. There is one peculiarity to be noticed amongst the general disturbance which is apt to follow derangement seated in this structure. Though by no means exclusively, they seem, more than those of any other tissue, to lead to those formidable symptoms which we know by the name of tetanus—symptoms which, unlike those to which I have previously adverted as having a general character consequent upon the local affections which I have mentioned, and which have had more or less of a febrile character, principally marked by disturbance of the circulation, in some of its various forms, is, in the present instance, more especially connected with the mysterious functions of the nervous system. Tetanus resulting from such injury, will, therefore, doubtless, form one of the interesting topics upon which you will have the advantage of listening to my distinguished friend and colleague, Dr. Marshall Hall.

Again, the bones may be the seat of derangement. A different kind of pain will be felt; the progress of the disease will be marked by slow stages, and the appearance of the adjoining tissues, when they become affected in consequence of disease of the bone, will be peculiar and characteristic of the primary affection. Again, the derange-

ment may exist in the cartilage covering the ends of the bone, or in the synovial membrane associated with it.

The strongly marked differences in the symptom of disease dependent upon the particular tissue which it affects, has been strongly insisted upon by Pinel and Bichat, and thus lead to the important service which the latter has rendered to medical science in the list which he gave to general anatomy, which, before his labours, could scarcely be said to have formed a distinct branch of anatomy, although our countryman, Carmichael Smith, must be admitted to have preceded him in sketching its outlines.

Great as are the differences in the local, and also in the general symptoms, dependent on the particular tissue in which the derangement has its seat, there are likewise differences dependent on other circumstances equally worthy of attention, and which are to be referred to the nature of the existing derangement. In some of the instances to which I have already alluded, I have spoken of inflammation as taking place in the part. Inflammation is, indeed, one of the most common, and, upon the whole, one of the most important forms of derangement with which, in the practice of our art, we have to contend; but inflammation itself comprises several varieties; and there are likewise cases in which, though it may exist, there are other causes which give the more essential character to the case. Thus the inflammation may either be of an acute or chronic character; it may remain pretty much concentrated on a particular part, and, though intense, be little disposed to spread; or, on the other hand, it may have a different character, and be much disposed to advance from the spot at which it was originally seated—as we see in erysipelas, and those forms of inflammation which are allied to it. One of the consequences to which inflammation is apt to lead is the formation of an external wound or ulcer, and nothing can be more various than the appearances which these open wounds present—differences which it is of great importance to be well acquainted with, and readily to appreciate, both for diagnosis and treatment. In both of these respects, the details connected with them belong to the surgical division of your studies. They form, however, so essential a part of the general view, that they must not be passed over with mere allusion. Sometimes you will find the wound remaining day after day in *statu quo*, showing neither disposition to advance in the repairing process, nor to be attended with increase in the extent or severity of the derangement. It may be covered with a moist exudation of the part, but in other respects it might almost appear as if it existed in a part devoid of life. Such would be an extreme

case of indolence, both as respects the part and the system. When this is not the case, we may find, on the one hand, the repairing process advancing and characterised by the production of pus, the appearance of little red elevations upon the denuded surface, the daily increase of substance by which the wound is filled up, and its contracting margin formed by advancing new skin. Even in this state you may have varieties; the pus may not be all you could desire, and the new growth technically known by the name of granulations may be faulty both in colour and size. There are more modes in which, in the absence of the repairing process, the aggravation of disease may exhibit itself. The open wound may increase in size, its surface still presenting a fresh and ulcerating character. This is, perhaps, the commonest form of ulcers not disposed to heal; but there is a more remarkable and rapid form of such ulcers, to which the very appropriate name of phagedenic is applied. Sometimes the extension takes place by the manifest death rather than by the gradual and imperceptible erosion of the adjacent parts. In such a case the sore would be said to have a sloughing character. The occurrence of this manifest death, or sloughing, would conduct us to another form of derangement, which is rather to be spoken of as a sequel to inflammation. Without this consequence being produced, there are other varieties in the appearance and nature of the ulcerated part, or open wound, depending upon the particular cause which gave rise to it. Either at the time the skin was broken, or, in other words, the wound was produced, or at some subsequent period, some offending cause, possessing particular properties, may have been applied to the denuded surface. Some of these, like the bite of the adder and the sting of the scorpion, quickly produce a high degree of inflammation, accompanied with much pain and swelling, extending to a considerable distance from the point at which the injury was inflicted, and attended with a high degree of constitutional disturbance, which is rarely fatal, but continues for a few days. There are other poisons produced by animals of a similar description; but more especially by those of the ophidian or serpent class, the fatal energy of whose poisons is so great that death cuts off the sufferer before there has been any time allowed for the part to which the poison was applied to undergo those changes by which any great alteration in appearance can be effected. At the same time, it is extremely probable that in the minute structure of the part to which the poison has been applied changes do take place, which, if invisible to the naked eye, may hereafter be disclosed by microscopic research. There are animal poisons of another description which do not necessarily

belong to the animal producing them, but are the result of changes induced by disease; on which account they are called morbid poisons. Thus a human being or other animal, suffering severely from local disease and consequent general disturbance, may have some of his fluids brought into such a state that if an extremely small portion be taken from the living body, or very shortly after death, and introduced into a wound, the most intense and destructive inflammation may be set up, accompanied by severe and even fatal constitutional disturbance. Of this description are the injuries to which the members of our profession are exposed in pursuing practical anatomy, and more especially that department which is connected with the investigation of disease, because in such cases the bodies are nearest to that state in which death occurred. To most of you I trust that practical anatomy is sufficiently familiar; for the allusion which I have just made to the dangers which attend it produce no discouragement, and if you have experienced the effect which I have mentioned in your own persons, or witnessed it in those of your dissecting-room companions, you will not only understand the illustration which it affords, but appreciate those means which may be adopted to prevent the mischief or obviate its consequences. Some of these poisons lead to so much local injury in the vicinity of the spot to which they may be applied, as to produce local death, or sphacelus, to which I shall have occasion again to allude. As another instance of a morbid poison producing a peculiar character in the particular part to which it is applied, and thence affecting the entire system, I may adduce a very remarkable instance of the communication of a morbid poison from the teats of a cow to a chap or other abrasion in the hand of a milker. This will give rise to inflammation, producing a sore, which, in its elevation, surface, and character of the fluid which it contains, is recognisable as that specific pustule to which the name of cow-pock is given. More or less general disturbance of the system is produced in conjunction with it, but the wonderful consequence which ensues is, that the individual who has been so affected is not only exempt from the recurrence of the same affection, but in most cases from the influence of another most widely spreading and fatal morbid poison, that of small-pox. We must receive with thankfulness the blessing which the discovery of such a fact has proved. Our curiosity and desire to investigate may be excited to understand how such a marvellous result is brought about, but there is reason to believe that it must long remain amongst those mysteries connected with animal life which baffle the physiologist, and that in practice we must be content to

take advantage of it as a piece of well-directed empiricism. There are other morbid poisons more or less analogous to that of small-pox, which I need not particularize in this general review, as they will require to be spoken of in detail when we shall be engaged with the consideration of particular diseases, but for the sake of illustration I must mention two or three others of a somewhat different character.

In the instances of morbid poison of which I have already spoken, the constitutional affection has quickly followed the local application of the poison, and whether it has exhibited itself with great severity or comparative mildness, such derangement has assumed the character of an acute affection, terminating in recovery or death, in the course of a few days. In the case to which I have next to advert, the local application of the poison, though it may produce a sore, is not invariably followed by constitutional disturbance. When this, however, is produced, it supervenes at a much later period, and does not appear to have any tendency to spontaneous cure. By its affection of the system at one time, it affords no protection against the recurrence of the like disease from subsequent application of the poison. The morbid poison of which I am now speaking has another remarkable property, namely, that of being, when it has affected the system, *transmissible by descent* from the parent to the offspring, so that we may apply to it the proverb, "the fathers have eaten sour grapes, and the children's teeth are set on edge." This poison is that of syphilis, which for several centuries past has been the scourge of vice in civilized countries, by whom it has more recently been introduced amongst the ignorant and unsuspecting aborigines of uncivilized countries, where it has proved one of the most fearful of the exterminating agents which have been brought to bear upon the natives.

Although this poison is generally communicated through the medium of impure sexual intercourse, I am perfectly warranted in introducing it amongst the affections of that part of the body which I have selected as furnishing illustrations of the general view of disease which I am now offering. It has not very unfrequently happened that the surgeon or the nurse, in their attendance on a patient suffering from the influence of this poison, has received a portion of it on a cut or abrasion of the hand. The sore which has followed has assumed the peculiar appearance which characterises the syphilitic ulcer, and some of the numerous phenomena of constitutional derangement which it is capable of producing, have ensued.

It would seem that the unlimited period of time during which this poison may affect the system gives it an opportunity of com-

bining its influence with that of various other causes of deranged health, modifying the appearances which they present, prolonging their duration by annulling the tendency to spontaneous cure, and introducing the necessity for peculiar modes of treatment. Thus, many of the diseases of the skin are modified by syphilitic taint; the fauces, so liable to transmit inflammation from exposure to cold, become, under the influence of the same taint, subject to a most characteristic cyananche of longer duration; and if rheumatism attack the patient, to which the nature of his treatment may render him particularly liable, the symptoms of this affection are modified in their character, and in their treatment are found to be additionally intractable and obstinate.

LECTURES

ILLUSTRATIVE OF SOME IMPORTANT CIRCUMSTANCES CONNECTED WITH

OPERATIVE SURGERY,

Delivered at St. George's Hospital,

By SIR B. C. BRODIE, BART.

LECTURE I.—Dec. 7, 1842.

THERE is no department of the healing art in which there is so much to interest or to excite both our own profession and the public, as there is in operative surgery. In the greater number of cases of disease treated by other means, it is difficult to say how much of the success obtained belongs to the remedies employed, and how much to the natural powers of the patient's constitution. But it is entirely different in those cases that are the subjects of operations. Recourse is had to this mode of treatment only when nature can go no further; and an operation, so far from being the direction of a natural process to a safe result, is, for the most part, an abrupt and rude interference with whatever nature is about. If a cure arise from an operation, it is to be attributed to that, and to that only: and thus it happens that some of the most splendid results obtained in the healing art are those which are claimed by the operating surgeon.

But an operation, while it may do good, may also be productive of evil. A man has a stone in the bladder; he is suffering torture; he has nothing but a frightful death to which he can look forward. As the least of two evils, he is contented to submit to the operation of lithotomy; and, it may be, that in the brief space of three minutes he is placed in a situation of perfect comfort, and that in forty-eight hours you are able to declare with confidence that his life is perfectly safe. A man may have a disease in the knee-joint, with carious bone and abscesses; he may be worn out by pain, by perspirations, sleepless

nights, and other symptoms of hectic fever. You amputate the limb; and even on that very night he may sleep soundly; there may be no more perspirations, and in a week he may be gaining flesh, and present the aspect of health. But then, on the other hand, there are other cases, in which the patient, after lithotomy, may die within forty-eight hours, although he might have lived—in misery, it is true—had he been let alone, for a year or longer. So, in the case of amputation for a diseased knee-joint, the patient, instead of recovering, may die in the course of a few days, and very much sooner than he would have done had not an operation been resorted to.

This double result of operations adds to the interest which this part of surgery possesses, and to the responsibility which is entailed on those who practise it. But what adds still more both to the one and to the other, is this—that it is not only great operations, such as lithotomy, and the amputation of the thigh, that are attended with risk. A man died in this hospital from the consequences of the sting of a bee; and another died, in this hospital also, from those of the bite of a leech. A patient died in consequence of a wound, not an inch in length, on the inside of the knee, made for the purpose of dividing the saphena vein. I have known a patient die from erysipelas that followed the simple operation of cupping; and there have been not a few instances of fatal venous inflammation supervening after a common bleeding in the arm. A lady had a small encysted tumor on her head not larger than a pea. A surgeon who was at that time (for what I am speaking of was many years ago) an eminent man in his profession, removed the tumor, but did it imperfectly. The disease returned, and another surgeon, at that time in large practice also, removed it more effectually. The patient died from erysipelas of the scalp. So others have died from the removal of piles, and other apparently trifling operations.

Considering these different results that are obtained in operative surgery, you cannot but feel how essential it is that you should do every thing that can be done to make yourselves masters of whatever belongs to this part of your profession; that you should study the subject of each individual operation in its most minute circumstances; that you should be well acquainted with the anatomy of all the parts concerned in it; and that you should learn to be dexterous in the use of your knife, and of other instruments employed. You will also perceive that even these qualifications will not be in themselves sufficient. The surgeon who is engaged in operations must attend in all respects to his mode of life; and especially he should be of those moderate and temperate habits without which

there can be no steady hand, no accurate eye; without which, also, there cannot be that activity and energy of mind, and readiness of conduct, which are so necessary to enable him to meet the unforeseen difficulties that will continually arise in the greater, and sometimes even in the smaller operations, of surgery.

Some things to which you have to attend in an operation may be considered as special—belonging to that particular operation, and not to others. In operating for strangulated hernia, if you divide the stricture in one direction, you may wound the epigastric artery; while if you divide it in another, no such risk is incurred. In the operation of lithotomy, if you make your incision too extensive, you may cut through the whole of the prostate gland, and that is almost certain death to the patient. There are other things which belong to no operation in particular, but to operations generally, and it is to these last that I wish more particularly to direct your attention in the present lecture. You must not, however, lose sight either of the one or of the other if you would be accomplished operators.

An accomplished operator! That term may be used in various senses; but I will tell you, before I proceed further, in what sense I use it. I apply it, not to him who looks at his watch to see in how short a space of time an operation may be completed; nor to him who, during an operation, is putting himself in the situation of those who are looking on, considering what they will say, and anxious to appear dexterous in their eyes. According to my notions, he only is an accomplished operator who, before he engages in an operation, looks at all the consequences, both good and bad, which may ensue; and earnestly endeavours to lay his plans so that there may be as great a chance as possible of the former being obtained, and of the latter being avoided; and who, while actually engaged in an operation, thinks neither of himself nor of the bystanders, nor allows any question to arise in his mind except as to what he should do to bring the case ultimately to a safe termination with the least possible distress to the patient.

Let me exhort you never to slur over a single case, nor proceed to the smallest operation, without having well considered what accidents may happen, what evil may follow, what degree of danger may ensue; and, having done so, let me advise you further, that you should as far as you can, make the patient acquainted with all that you know upon the subject: or if he be not in a state in which he can judge for himself, then that you should make the same explanation to his friends. That you should do so is but an act of justice to your patient. It may be quite right for a man to run a risk by

going through an operation, but it is not right that he should do so without knowing it, or at any rate not without his friends knowing it. But it is also an act of justice to yourselves. A surgeon has no business to take all the responsibility of an operation upon himself. The friends should never have the opportunity of turning round upon him afterwards, and saying, "you said there was no danger, and here my wife, my husband, or my friend, is dead." In some of the greater operations, indeed, there is not much explanation of this kind necessary, because the world very well know that where you perform lithotomy or amputate the thigh there is a certain degree of hazard. But do not overlook the risk even of the smaller operations. If I am asked whether there be any danger, I never answer that there is none: I say, perhaps, what I have said to you just now, that I have known a person to die in consequence of the sting of a bee, and the bite of a leech; but then I add, that the danger is so small that it is not to be put in comparison with that which will arise from allowing a disease to remain, which is itself a source of danger: or if the disease requiring the operation be one of no serious character, then I may observe, that the patient must decide for himself, whether it be not worth his while to incur a very small risk for the sake of the relief which the removal of the disease will give him. We must all be contented to incur such risks as these in many of the common concerns of life. You may go out on horse-back, or on the top of a stage-coach, and may be thrown off and killed; you may be smashed on a railroad, or drowned when on board a steam-vessel. As these very trifling hazards are to be overlooked under other circumstances, so they are to be disregarded in the smaller operations of surgery. State all this to the patient, or his friends, in the way in which I have now stated it to yourselves. It will be a great comfort, and afford much peace of mind in the arduous profession in which you are engaged, if you attend to this advice. A man has a small tumor, and you remove it; the chance of mischief from the operation being not one in a thousand. But perhaps you are performing small operations daily, and to you, therefore, the chance is multiplied. It is almost nothing to the patient, but it becomes much to you; and it is especially for your own advantage that even these small fractions of danger should never be concealed.

There is no greater source of danger, you may well suppose, in operative surgery, than hæmorrhage. A large flow of blood may kill the patient instantly. If operators were careless on this point, there would be no want of examples of death from hæmorrhage: and even in spite of all the care that may be taken it happens sometimes

that patients die from loss of blood, either at the time of operation or very soon afterwards. When I was house-surgeon to this hospital, a patient had bleeding after lithotomy which could not be stopped, and he died in a few hours. I performed the same operation on a private patient, in whom there was hæmorrhage from the large veins, apparently in the neighbourhood of the neck of the bladder, which could not be stopped, and he also died in about a couple of hours. The danger from hæmorrhage is greatest in very early life. I have seen young children several times at the point of death from this cause. I accompanied an eminent surgeon, when I was young, to remove a nævus, or blood-vessel tumor from the back of a child's neck, (at that time nobody ever thought of removing those tumors except by the knife.) There was a good deal of bleeding at the time, but it appeared to have stopped. The child was put to bed, but in the course of a few minutes it was dead.

However, it certainly happens very rarely that patients die of hæmorrhage as an immediate result of an operation. Do not, however, think that hæmorrhage is of no consequence because it does not cause so frightful a catastrophe as this. The patient may survive a large hæmorrhage and be very well the next day, and the day after that, but it may lay the foundation of mischief, such as I shall describe in another lecture, which destroys the patient ultimately. Nor is this all. The patient may recover from the operation, and the wound may be healed, and yet, where there has been a copious hæmorrhage, the constitution of a delicate person, more especially of delicate woman, may be so much damaged by it, that it may not recover it for some years. After an operation I have sometimes heard a bystander say, "Oh, he has lost no more blood than it will do him good to lose." It is painful to me to hear such an observation as this: be assured that an operation cannot be performed with too little loss of blood. The loss of a few ounces in a patient who has a stone in the bladder, complicated with disease of the kidneys, will make all the difference between life and death: and so it is in many other cases. If it is desirable that the patient should lose blood, you can always take it from his arm, and just as is wanted, and no more. There can at any rate be no advantage from the loss of an uncertain quantity of blood in an operation. Some people seem to me to have a notion that the loss of blood in an operation will make the patient less liable to inflammation afterwards. But I believe that it is just the reverse. Bleeding may relieve phlegmonous inflammation where it already exists, but it does not prevent its existence; and on the other hand, I have no doubt that it increases the liability of the patient to other kinds of inflammation, such as

erysipelas, or diffuse inflammation of the cellular membrane, or venous and arterial inflammation. Those asthenic inflammations, if I may use the expression, occur especially in those persons who have lost much blood. Let it be your object, therefore, in every operation, that it should be performed in such a manner that there should be as little waste of blood as possible.

And I should mention to you that even a large loss of blood before an operation may be productive of the most disastrous consequences afterwards. A man had a lacerated wound of the thigh, his limb having been caught in some mechanical engine. There was considerable bleeding. He became faint, and the bleeding stopped. He was brought into the hospital in a state approaching to collapse. There was a great deal of injury, and it was evident that nothing could be done but to amputate the limb. The patient lay in bed waiting for what we call reaction to take place. By and by the pulse rose, and the wound began to bleed. The house-surgeon ran for a tourniquet, which unfortunately was not at hand, and before it could be procured the patient had lost an additional quantity of blood. We were then forced to wait till reaction took place a second time, and when it did so the limb was amputated. The patient was taken back to bed pretty well at first; all at once he felt an irresistible impulse to make water, but could not do it. A catheter was introduced, but the bladder was found empty. In a few minutes he died. On examining the body we found the heart flaccid and empty of blood: the vena cava superior and inferior, and the vena azygos, vessels which are generally full of blood, were all empty. The only blood that could be found was in the aorta and its larger branches. The heart had sent forth into the vessels the last drop of blood contained in it, but there was not a sufficient quantity of blood going the round of the circulation to fill the heart again.

To avoid an unnecessary loss of blood in operations, it is of course indispensable that you should have a thorough anatomical knowledge of the parts concerned; but you are not dependent on yourselves alone. Whatever may be your own skill, it will be insufficient, if you are not provided with a good assistant. It is sometimes better, when an operation is likely to be tedious, to take up the bleeding vessels as you go on; as, for example, in the dissection of some tumors, and even in some cases of amputation, where the patient has no blood to spare. Sometimes, where there is a long-continued dissection, you will find great advantage from using a silver knife with as sharp an edge as can be given to this metal. The silver knife will divide the cellular membrane and smaller vessels, but it will not divide any vessel of considerable size. As it divides the cellular membrane

it also stretches it, and elongates the vessels which are in it, and you know that vessels which are stretched before they are divided bleed but little.

It is a great mistake, (at least in my judgment,) to perform amputation without a tourniquet. I know, indeed, that you may stop the flow of blood in the femoral or in any other large artery, by the pressure of a strong man's thumb; but by means of a tourniquet you may prevent the bleeding from the small vessels as well as the large ones, and I need explain no further why it should not be neglected.

There is another point, which it is always worth your while to consider before an operation. Has the patient any particular disposition to hæmorrhage? There are some families in which almost every individual is liable to bleed in the most alarming manner from the slightest causes—in whom a pinch of the skin will cause an ecchymosis, and a wound with the point of a pen-knife will be followed by a serious hæmorrhage. Whether in these individuals the coats of the arteries are, as some have supposed, unusually thin, and incapable of contraction, or whether there be some peculiarity in the blood, so that it does not readily coagulate, I cannot say; but we know well the fact of the existence of persons who have this hæmorrhagic tendency, and in whom operations are therefore more than usually dangerous. A man came to this hospital, many years ago, with a wound in his forehead, and he nearly bled to death. The flow of blood was stopped at last, not by tying particular vessels, but by a general pressure; but it returned: it was again stopped in the same manner, but it again returned, and it was not till a large slough had been made by caustic that the hæmorrhage was finally arrested. This man, when younger, had had a bad tooth, and he went to a dentist to have it drawn, but he very nearly bled to death. Some time after he had been at the hospital with this wound in the forehead, he had another bad tooth. At first he was afraid to have it drawn, remembering the danger to which he had been exposed, but at last his toothache drove him to a dentist, by whom it was extracted. There was an abscess at the bottom of the tooth, which was in the upper jaw. A profuse hæmorrhage followed the operation. I was called in, two or three days afterwards, and he had been bleeding all the time. I tried various ways to plug the alveolus, and at last applied the cautery. It stopped the bleeding only for a short period, then it returned; and all other means having failed, I tied the carotid artery. This also was unsuccessful, and the bleeding went on, and ended fatally. This patient's child had the same hæmorrhagic tendency, and very nearly bled to death from the bite of a leech. There was a gentleman belong-

ing to a family of which I have seen many members, all of whom have this singular disposition to hæmorrhage. Upwards of twenty years ago, he sent for me to see him. He had symptoms of stone in the bladder, one of which was a most prodigious discharge of pure blood from that viscus. A surgeon whom he had consulted previously had declared him to have a *fungus hæmatode* of the bladder. I examined him, and found a stone. I recommended that he should go through the operation of lithotomy, but he said he should bleed to death; and a circumstance had occurred, since I first saw him, that seemed confirmatory of his opinion. He had been cupped in the perineum, and the wounds made by the scarificators had bled profusely every other day for nearly three weeks. Having seen a good deal of him, I partook of his fears, and was rather glad to avoid the operation. By and by he sent for another surgeon, who was in very large practice, and certainly had much more knowledge than I at that time possessed. He sounded him, found the stone, and said he had better be cut for it. "Oh!" said the patient, "I shall bleed to death." The surgeon, not being rightly informed on the subject, rather laughed at this: the operation was performed, frightful bleeding followed, which went on for twenty-four hours, and then the patient died.

There is another cause of fatal results at the time of, or immediately after, an operation; namely, the severe shock which, under certain circumstances, it may occasion to the nervous system. Sir Everard Home, in the instructive lectures which he formerly gave in this hospital, was accustomed to mention the case of a man who had a diseased testicle. He was placed on the table to go through the operation of castration. The removal of the testicle is a very simple process; there is no bleeding but what is under command, and there was no bleeding here: but when the testicle was removed, they looked at the man, and he was dead. When I was a student in this hospital, there was a man with a large stone in the bladder. Sir Everard Home, who was a dexterous lithotomist, performed the usual operation. The stone broke to pieces, and that at first seemed to be rather a good thing than otherwise, for it is better to take out a very large stone piecemeal, than to drag it out entire. But this occupied a long period of time, there being a deep perineum, and a great number of fragments. The operation I believe lasted a whole hour; then the man was taken back to the ward, but he was dead before he was in bed. This was probably nothing but the effect produced on the nervous system by a long, painful, and anxious operation, upon a healthy subject; and for such a contingency as this you cannot in all cases be

prepared. But you may be prepared for it in some cases by well considering the condition of the patient before you undertake the operation.

Suppose for example a man to have disease of the heart, with symptoms indicating ossification of the coronary arteries, that is, symptoms of angina pectoris: he will be much more likely to die from the shock of an operation than another patient; and therefore in him everything but the smallest operation should be avoided.

In the early part of my professional life, I was present at an operation of lithotomy performed on a patient who had many urgent symptoms of stone in the bladder: the urine was full of bloody mucus, offensive to the smell, and tinged with blood. The suffering which the disease occasioned was almost beyond imagination; but still it was a case in which, notwithstanding the greatness of the suffering, no surgeon with the knowledge we now possess would venture on an operation. This class of diseases was not so well understood at that time as it is at present; and two of the most distinguished surgeons of the day agreed in recommending lithotomy. The operation was performed; it did not last three minutes, and there was scarcely any hæmorrhage. The patient was taken off the table, but he was dead before he had been three minutes in bed. On examining the body, the prostate gland was found extensively ulcerated; and it seemed that the passing of the instruments over the ulcerated gland had produced that impression on the nervous system that proved thus instantly fatal. I witnessed another operation performed under exactly the same circumstances; except that there were several stones, and, therefore, that it was not so soon over. Before the patient was taken back to bed he was in a state of perfect coma, with stertorous breathing. In this condition he remained for some hours, and then died. A man was in the hospital with stone in the bladder, under the care of Mr. Ewbank: there was a consultation on the case, the question being whether the patient should undergo the operation or not. The symptoms were exactly similar to those which occurred in the two last-mentioned patients; and on the circumstances being stated to him, Mr. Ewbank at once gave up all thoughts of the operation. It was well that he did so; for on the following day the man died, and an extensive ulceration of the prostate, with disease of the bladder, was discovered on dissection.

Of course you may do a great deal towards preventing such a catastrophe by looking thoroughly into the case first, and it will indeed rarely happen that you may not anticipate and avoid the danger. Still, such a case may occur as that of a pa-

tient suffering in an unusual degree from the impression which the operation makes on his nervous system, and in which, by the proper and timely exhibition of stimulants, the system may be supported under it, and the patient's life preserved.

ON THE COMPOSITION OF THE BILE,

FOUNDED ON ITS ELEMENTARY ANALYSIS.

BY GEORGE KEMP, M.B.

Pet. Coll. Cantab.; Fellow of the Cambridge
Philosophical Society.

(For the *London Medical Gazette*.)

THERE is not, perhaps, in the whole range of physical science, a subject which has afforded more ground for diligent research and hypothetical deduction, than the biliary secretion. To the chemical philosopher the difficulty of the investigation, and the contradictory conclusions of the most upright and intelligent observers, urge him to renew the attempt to reconcile the discrepancies: to the physician, the daily observation of phenomena which could only be traced to an altered state of a secretion, the very nature of which was involved in obscurity, furnish him with motive enough to avail himself of the slender assistance which physiology afforded him to arrive at something like general deductions on the subject: while the very charlatan, safely sheltered under the obscurity of "bilious affections," has never been backward to make use of them for the advancement of his own interest.

The utter hopelessness of arriving at any satisfactory conclusions from the examination of the bile by means of reagents, must be considered as placed beyond a doubt, by the acknowledged fact, that a large portion of the substances obtained in the usual analysis of the bile are products of decomposition brought about by the reagents themselves; and this consideration induced Professor Liebig to suggest the necessity of an appeal to elementary analysis as the only legitimate means of eliciting general truths, and affording the physiologist and pathologist something like fixed views on this

interesting and important subject. The writer cheerfully undertook the investigation; and if the facts of the case compel him to differ in opinion from those whose probity and love of truth have endeared them to men of science, as much as their deep research and extended labours have rendered them illustrious, he is convinced that they will be the last to reflect on the incompleteness of the research on a subject involved in so much obscurity, and embracing so wide a field.

As a preliminary observation, it may be remarked, that the main object kept in view in the following research was to eliminate the body which presented the most constant and characteristic ingredient in the bile; and to arrive at this object two things seemed desirable:—First, to prepare the subject of analysis from bile obtained at different times, under different circumstances, and subject to different methods of preparation; and secondly, to submit the same portion of bile to different modes of treatment. The most sceptical or scrupulous could hardly suggest a more rigorous or severe control; whilst, on the other hand, a less rigid mode of demonstration ought to be rejected as unsatisfactory, because defective. It was, at the same time, conceived, that should a body present itself under the above circumstances, which possessed constant identical or even strictly analogous physical and chemical characters, no sound judgment could be justified in rejecting the evidence afforded of its being a simple body, in the usual acceptation of the term. A compound substance may, indeed, exist, in which a variety of bodies may enter, but in that case, to insure constant chemical composition; and uniform physical characters, these bodies must coexist in constant, unvarying proportions; and even supposing the bile to be such a substance, it must, in a practical sense, be treated as a simple body. In the sequel, however, we shall find reasons for concluding that the view of Demareçay is correct, and that the bile consists essentially of an electro-negative body in combination with soda. And having alluded to Demareçay, it would not be ingenuous to conceal the fact, that no researches founded on the reaction of other bodies can be placed in comparison with those which admit of no hypothetical deductions, but rest

exclusively on demonstrative evidence for their establishment; and it is singular that the only defective point in the investigations of Demargay, was the remaining content with the analysis of the acid obtained from the action of hydrochloric acid on the bile, and then resorting to probable evidence in order to establish the identity of choleic acid and the electro-negative body, which, in combination with soda, forms the principal ingredient in the solid portion of the bile. It is true, that the quantity of soda in this fluid was ascertained by direct experiment, and found, as nearly as possible, to equal the quantity of soda which combines with choleic acid; the soda, however, was estimated as sulphate, which precluded the possibility of ascertaining the quantity of chloride of sodium always present and in varying proportions. The following review of the well-known analyses of Berzelius and Thénard will show how easily the above mode of determination may lead to false conclusions.

Berzelius found of chloride of sodium, lactate of soda, and extractive matter, 0.74 per cent.; this would represent at least 0.40 per cent. of soda, not calculating the quantity of this base combined with phosphoric acid. Thénard found chloride of sodium 0.40 per cent., phosphate of soda 0.25 per cent., and sulphate of soda 0.10 per cent. These quantities represent at least 0.3 per cent. of soda. In either case, a serious error in the atomic weight would result in the second figure. For the convenience of the reader, the different substances submitted to elementary analysis in the following research will be referred to different portions, with the description of the mode of preparation, physical characters, &c. preceding each series of analysis. I must here acknowledge myself indebted to Dr. Heiligenhöfer, of Frankfort, for his politeness, on two occasions, in obtaining for me the bile of a large number of oxen killed at the same time, and immediately evaporated to a thick extract in a water bath. The first portion consisted of the bile of twelve oxen, and was that used for the experiments and analyses described under the head Portion I. The second quantity of bile, from an equal number of oxen, was devoted to the investigations included under Portions II., III., and IV. Thus it will be seen, that every effort

was made to arrive at accurate average results, and, in fact, these were more uniform than the writer expected.

PORTION I.—The bile, received in the form of extract, was treated with alcohol, sp. gr. 850, in order to remove the mucus, the whole filtered through linen, and subsequently through paper; the clear solution evaporated *in vacuo* over sulphuric acid; the resinous mass thus obtained reduced to powder, and treated with ether free from alcohol and water. If the ether is not deprived of these bodies, the powdered matter cakes together, and thus a very small surface only is exposed to its action (See Berzelius, *Annalen*, B. 43, H. 1); the ether was poured off, and another quantity added; the process being continued until, on evaporation, no residue was perceived; the residue again dried under the receiver, and treated with alcohol, sp. gr. 840, filtered, the clear solution evaporated *in vacuo*, and reduced to powder for analysis. On reviewing the above mode of preparation, it will be remarked that no reagent had been used which could be presumed to effect any decomposition or metamorphosis; the use of barytes, sulphuric acid, oxide of lead, &c., was entirely excluded; and thus it was hoped that the body obtained expressed at least the *sum* of the elements composing the essential ingredient or ingredients of the bile. The only objection that could arise was the possible presence of fat acids in combination with soda; and it must be confessed that this circumstance presented such difficulties in the analyses, that subsequently a different mode of preparation was resorted to. The salts of the fat acids were ultimately removed, but not until a very large quantity of ether had been used, as will be seen by the following considerations. Of the neutral stearate of soda not more than 0.15 per cent. is soluble in ether; of the margarate of soda 0.17 per cent., and of the oleate of soda, which is much more soluble than either of the above, only 1.14 per cent. (Berzelius, B. vi. section 532, &c.) Thus it appears that of the most soluble of these salts 99 parts in weight of ether would be necessary; and of the least soluble, nearly seven hundred, to insure their removal. In the above experiments, however, a much larger quantity was used before the ether left

no residue on evaporation. The result of the analysis of the substance, when perfectly freed from fat acids, was as follows:—

0·253 grammes gave Carbonic Acid = ·538 ∴ Carbon = 58·46 per cent.

Water = ·190 ∴ Hydrogen = 8·30

The object of the analysis in the present stage was merely to make a general comparison of the constitution of the substances obtained by different modes of preparation; the quantity of inorganic matter, therefore, has not been deducted. We now pass on to—

PORTION II.—The bile was deprived of mucus as above, the clear solution precipitated with barytes water in slight excess, and filtered; the filtered solution treated with carbonic acid to remove the excess of barytes, again filtered, and the clear solution mixed with one-third its bulk of ether, well agitated, and treated with distilled water until it became opaque. This mode of separating the fat, &c. is preferred by Professor Liebig, and is an important improvement, as it is not necessary afterwards to waste a large quantity of water-free ether. On setting the solution aside it soon separated into two layers,

0·300 grammes gave Carbonic Acid = 0·638 ∴ Carbon = 58·46 per cent.

Water = 0·238 ∴ Hydrogen = 8·81

The inorganic matter in the two above portions was carbonate of soda, with a small quantity of chloride of sodium; and the results seemed strongly to confirm the opinion of Demarcay, that the bile is an inorganic acid in combination with soda. It now seemed probable that by carefully removing the inorganic bases in the form of sulphates, and the fat acids by means of ether, we should be able to eliminate the body sought for in an isolated form, or at least to produce the salt of soda artificially. The latter plan was adopted as least difficult, and presenting fewer risks of a mixed result. The method pursued was as follows:—

PORTION III.—The bile was deprived of mucus as above, and filtered; the clear solution precipitated with barytes water, and again filtered; the resulting clear solution treated with a slight excess of sulphuric acid, diluted

0·244 grammes gave Carbonic Acid = ·523 ∴ Carbon = 58·8 per cent.

Water = ·187 ∴ Hydrogen = 8·51

Or, putting the results of the above together,

	I.	II.	III.
Carbon =	58·46	58·46	58·8
Hydrogen =	8·30	8·81	8·51

the upper etherous portion containing the uncombined fats, &c. and the lower containing the substance intended for analysis. This portion was separated, evaporated, and dried in an oil bath, at 110° Celsius, powdered, and treated with ether until it left no residue on evaporation. The remainder of the process was similar to the foregoing in Portion I.

The physical characters of this body were perfectly similar to those of the former portion: it is unnecessary to repeat them, as every person likely to read this paper is acquainted with the characters of bile reduced to an extract. One important point, however, must be borne in mind, that neither this nor the preparation Portion I., was precipitated from its aqueous solution by acetic acid. The following were the analytical results:—

with five times its weight of water, and filtered. It will thus be seen that the bases were precipitated in combination with sulphuric acid. To remove the fat acids the clear solution was treated with ether, and separated as above. It was now saturated with carbonate of soda, and the sulphate found precipitated in the alcoholic solution. The carbonate of soda was used in excess, and agitated in the solution repeatedly. If, now, an electro-negative body remained in solution, which had a greater affinity for soda than carbonic acid possessed for that base, it was evident that it would combine with it. On filtering, evaporating, drying in an oil bath, &c., a body was obtained possessing precisely the same physical characters as the preparations obtained from I. and II. and not precipitated by acetic acid. The following results were obtained by analyses:—

Such a resemblance in three analyses obtained from a substance prepared under totally different circumstances, hardly leaves a doubt that we were operating on the same substance. The

new method of Drs. Varrentrapp and Will. A vast number of similar cases could be given, but this is unnecessary, as Dr. Will is just about furnishing the public with the results of some decisive experiments, which will set the matter at rest for ever.

As the present investigation is merely the commencement of a series of researches into the elementary composition of the bile, we have not ventured to propose a formula; indeed, it is evident that, with the imperfect knowledge which we as yet possess on the subject, such an attempt must be considered as a mere hypothesis, or probable inference, which the very next analysis might overthrow. We think, however, that the facts elicited justify the following conclusions:—

1. That the bile of the ox is a *chemical compound* of an electro-negative body with soda.

2. That this body is not the *choleic acid* of Demarçay, as it is not precipitated from its combination with soda by acetic acid.

3. That it is not the *bilin* of Berzelius, as it is not separated from soda by means of carbonic acid. Repeated experiments were made on this subject under circumstances peculiarly favourable to the separation of the soda in the form of carbonate. The compound forming the subject of the last analysis was dried in an oil-bath at 110°, and then dissolved in alcohol, sp. gr. .809, at 15° C.; a very strong current of carbonic acid gas was now passed through the solution for two hours. No precipitate took place. Another experiment was made with bile taken out of an ox immediately after it was slaughtered, and while the secretion was warm. The mucus was separated with alcohol, and the clear solution evaporated to dryness. It was now again dissolved in alcohol, sp. gr. .809, filtered, and exposed to the action of carbonic acid gas as above. This experiment also proves that, in this case at least, no *free* soda was contained in the bile.

With reference to the peculiar sweetish taste of the bile, the opinion has been advanced by Berzelius that it may probably arise from the free *glycerin* held in solution. If this were really the case, on subjecting the bile to destructive distillation we ought to perceive a distinct smell of *acrolein*.

In no case have I obtained this result, although, in the above investigations, fifteen general determinations of ash were made; and in the course of these operations the peculiarly pungent nauseous smell of *acrolein* must have been developed had any glycerin existed.

Such are the most important of the results which the writer has obtained from upwards of seven months' researches, and more than forty analyses. The object has been to support no theory, and, as much as possible, to avoid the prepossessions which a diligent study of the previous researches of others was calculated to produce.

For the deficiencies, he feels that every allowance will be made by the only competent judges on the subject—those who have been themselves engaged in the difficult department of animal chemistry. A wide field yet remains open in the ultimate analysis of the human bile, the bile of fishes, and a general comparison of the bile of graminivorous and carnivorous* animals. The writer proposes to devote himself to the investigation; and hopes that, if ever completed, much of the obscurity which at present envelops the subject may be removed, and some general facts established directly applicable to the treatment of an important class of diseases.

Giessen, Nov. 21st, 1842.

THE SURGICAL TREATMENT OF IMPAIRED VISION,

CONSEQUENT ON THE OPERATION FOR STRABISMUS; ILLUSTRATED BY A CASE.

To the Editor of the Medical Gazette.

SIR,

IF the accompanying case, which is intended as an illustration of the treatment of one of the ill consequences which occasionally result from the operation for strabismus, be thought by you worthy of the pages of your valuable

* The examination of the elementary composition of the bile of the strictly carnivorous animals was undertaken by me, at the request of Professor Liebig, in the month of May last. A fox was the animal from which the secretion was obtained; but the quantity was so small that no general fact can be deduced from the analysis, as there was not enough for nitrogen analysis or control. I trust shortly to be able to obtain in England the bile of the lion or tiger, as the type of the carnivorous animals.

ble journal, its early insertion will much oblige,

Your obedient servant,
JAMES J. ADAMS.

27, New Broad Street, Dec. 1, 1842.

Of all the ill consequences which have occurred after the removal of a squint by the section of one of the recti muscles, no one has produced so much alarm to the patient, anxiety to the surgeon, and injury to the reputation of the operation for strabismus, as the impairment of the vision, either in the eye operated on, in its fellow, or simultaneously in both; for, as yet, in many instances where the sight has been impaired by the straightening of a squinting eye, medical treatment has failed to afford relief.

Having witnessed, in several cases of the kind above mentioned, the difficulty and failure of medicine to relieve the impairment of the vision, I directed my attention to the peculiarities of the defective sight, and found them to be such as to lead me to believe that an undue contraction of certain recti muscles of the eyes might induce that kind of impaired vision which succeeds to the straightening of an eye after the division of its contracted muscle; and therefore, that a surgical mode of treatment might be employed. The following case is an instance of the successful application of a surgical treatment.

Aug. 9, 1841.—Ann Clancy, æt. 22, and healthy, applied to me for relief to her sight, which she described as being so defective, as to render her incapable of earning her living by any occupation requiring ordinary exertion of her eyes. The positions of her eyes generally were natural, but occasionally not so when viewing attentively near or distant objects. On examining the power of her sight, I ascertained that she could not see to read letters of small print, nor to thread the eye of a common-sized needle; and that large sized letters, which she could distinguish at first sight, could not be recognized after a gaze on them for five minutes; also, that the longest time she could continue to exert her eyes over letters of large size did not exceed twenty minutes, though aided by frequent rests; for the sight then became so dim as to require a rest of the eyes during the space of many hours before she again could distinguish the form of

a letter: therefore, her sight was defective as to clearness and power of continued exertion.

If the right eye was used by itself, its sight was as defective of clearness as that of both, but its disposition to an increasing dimness, during exertion of the eyes, much stronger.

The sight of the left eye, used separately, was more defective in clearness than that of the right, and its dimness less disposed to increase, during exertion, than that of the sight of both eyes.

The dimness of her vision was accompanied by severe pain across the forehead and left brow.

History.—At the age of two years she squinted strongly with the left eye in the direction of her nose. As she grew older, the squint lessened; and it was then observed that, in proportion to the gradual straightening of the eye, the sight of it became impaired. In December 1840 the squint of her left eye was slight, and its sight very defective, though the sight of both eyes, and that of the right, when used by itself, was perfectly natural as to clearness and strength, so that the defective sight of the left eye did not produce any inconvenience to her. However, she felt anxious to have her eye straightened, and for that purpose applied to an eye hospital, and placed herself under one of the surgeons, who divided the internal rectus muscle of the left eye, the position of which instantly became divergent, and its sight, with that of the right, confused and double. The subsequent effects of the wound of the operation were large troublesome granulations, and severe prolonged irritation of the conjunctivæ scleroticæ. During the succeeding months, January and February, the same state of confused and double vision, with some additional sense of weakness, existed, though she had not attempted to read or work. In March she first attempted to use the eyes in her ordinary occupation, and ascertained the degree of the defect of her sight, which, as to clearness and power of continued exertion, she believes to have been at about half of its present degree. From March to the succeeding August her sight declined in clearness and strength, notwithstanding many occasional and remarkable variations in its degrees of imperfection:

e. g. sometimes during a few minutes it would be perfectly restored to her, then suddenly be rendered darker, nearly to complete blindness, in which state it would remain for a few minutes, and then return to its usual condition : at other times it would remain improved during several days, and then, for an equally brief period, be more than usually impaired.

The treatment of these symptoms of amaurosis was conducted, by the surgeon who removed her squint, steadily and with much attention, during a period of nine months; and the means he employed were those usually adopted in obstinate cases of amaurosis, namely, purgatives, alteratives, mercurials, tonics, counter-irritants, &c. However, the result of his treatment being unsuccessful, he told her "that he knew not what more to do for her;" soon after which she applied to me. Having had the opportunity of witnessing her medical treatment, which had not been wanting in skill, I determined not to repeat it, but at once to apply a surgical treatment I had previously adopted with success in cases where the vision was impaired, and the position of the eyes natural.

On August 9th I divided the internal rectus muscle of the right eye; the effect of which was an immediate divergence of both eyes, particularly of the right.

17th.—Both the eyes much diverged, but the left more than the right. Sight of the right eye improved in clearness and power of continued exertion; that of the left not improved. Double vision not so distinct as before operation.

24th.—Divergence of the eyes single and alternate. Sight improved, *e. g.* can see to read newspaper print during the space of two hours, without any dimness of the sight occurring to need a rest of the eyes. By the left eye alone can see to read type "great primer." The pain of the head and eyes has not been felt since the second day after the operation.

September 4th.—Position of the eyes nearly natural, but subject to alternate divergence. Sight much improved, *e. g.* she can see to read "pearl" type from the distance of eighteen inches, and to read or work with her needle during three hours at a time. Double vision still present.

6th.—Divided the external rectus of the left eye.

12th.—Position of the left eye central; that of the right slightly divergent. Sight not quite so perfect as it was previously to the last operation; the vision of the left eye has not improved, and that of the right is less perfect.

21st.—Sight, with both eyes open, remarkably improved; she states that it is now as perfect "as she has ever known it to be," for she can see to read, or to do fine needlework, during as many hours as she may please, without feeling the least degree of inconvenience from dimness of the sight or aching of the eyes. By the left eye she can read type "English." Double vision is yet present.

27th.—Divided the external rectus of the right eye (without removing a portion); and the immediate results were, an apparent central and correspondent position of both eyes, and a lessening of the double vision.

29th.—The sight remains unaffected as to clearness and power of continued exertion. The double vision has not ceased, but much lessened.

October 22d.—Position of the eyes variable; sometimes central, at others subject to a slight alternate divergence. Sight of the left eye improved; can see to read "pearl type" by it.

November 25th.—Position of the eyes generally natural, but occasionally not so, either the left or right eye being slightly divergent, while its fellow is central. The sight continues to be perfect as to clearness and power of enduring lengthy exertion; for on no occasion has any return of its late defective symptoms been produced. The sight of the left eye has ceased to become dim after exertion.

January 1842.—The position of the eyes and state of the sight are nearly the same as when last reported, the only exception being, that the twofold appearance of objects is more troublesome to her from its being distinct in proportion to the intentness with which the object is viewed.

31st.—Redivided the external rectus of the right eye, the immediate effects of which were a central position of the right eye, with a convergence of the left and a lessening, with alterations, of the double vision.

Feb. 10th.—Position of both eyes perfectly natural; double vision less

distinct, and not so frequently seen; sight, in other respects, natural.

April 25th.—Appearances of the eyes natural, and their position perfectly so to any but a very accurate observer; for the slight variations in their consensual movements can only be detected when she is directed to look suddenly and attentively to different distances.

Oct. 6th.—Prominence and position of her eyes quite natural; the power of convergence slight, and equal at four and a quarter inches. The power of inverting the right cornea is complete; that of the left is not so by one and a half lines; the power of eversion is not complete in the right eye by one line, nor in the left by one and a half lines.

Sight natural in its clearness and power of continued exertion, with both eyes open, or by the right eye alone; *e. g.*, she can see to read the finest engraved letters, namely, those which express the Lord's prayer within a circle of less size than that of a four-penny-piece. If the left eye alone be used, such small letters can only be distinguished separately, so that she spells, instead of reading, the words by it.

The above case having been related particularly with the view of illustrating the effects of the division of the recti muscles on the sight, I have intentionally omitted many interesting facts with regard to the positions and motions of the eyes.

REMARKS.—In order that the facts of this interesting case may be the more strongly impressed on the memory of the reader, permit me to add a brief review of them.

In December 1840, A. C., 22 years of age, submitted to the operation of division of the left internal rectus muscle for the removal of a convergent squint of the left eye. The results of the operation were a complete straightening of the eye operated on, and a defect of the vision of both eyes, characterised by a want of clearness, strength, and singleness. During the nine months succeeding to that of the operation, the position of both eyes maintained a nearly natural correspondence in a central direction, but the sight, during the same period, became more and more impaired, although medical treatment was constantly and skilfully applied. On August 9th, 1841, the position of her eyes

being nearly natural, and her sight so defective in clearness and power of continued exertion, as to render her incapable of earning her living, the internal rectus muscle of her right eye was divided. In the course of a few days after the operation an extensive improvement of the sight took place. On September 6th, the external rectus of the left eye was divided, and on the 24th instant, her sight, when both eyes were open, had become, according to her own statement, as perfect as she had ever known it to be in respect to clearness and strength; but not as to its singleness. September 27th.—The external rectus of the right was divided, and a further improvement to the vision, particularly to that of the left eye, succeeded the operation.

January 1842.—Sight naturally clear and strong, but yet subject to a state of double vision.

31st.—The external rectus of the right eye redivided, by which operation the positions of the eyes were rendered more natural under every circumstance, and the double vision nearly removed.

October.—The sight of both eyes equal and perfectly natural.

ON THE
CONSTRUCTION AND APPLICATION
OF
INSTRUMENTS USED IN AUSCULTATION :

Being the Substance of a Communication made to the Medical Section of the British Association at Manchester, in June 1842,

By C. J. B. WILLIAMS, M.D. F.R.S. &c.

THE acoustic examination of disease having been so profoundly as well as generally studied, it is not surprising that the instruments used in it should have wanted modifications to make them exhibit better the phenomena which increased experience and skill have discovered. To make these improvements some knowledge of acoustic science is necessary; and it might seem to be the province more of the natural philosopher, than of the physician, to suggest them.

But it must be borne in mind, that a good understanding of the ends in view, as well as of the instrument, is required. To suggest what a stetho-

scope ought to be, a knowledge of acoustics is not more necessary than an acquaintance with disease, and experience in its investigation. A want of these latter qualifications, in my opinion, renders some recent suggestions from the Professor of Natural Philosophy at Edinburgh*, of little value to practical men; and an imperfect acquaintance with the whole of the purposes and principles of the stethoscope seems to me apparent in other late proposals for the improvement of the stethoscope.

Twenty years' attention to the principles and practice of auscultation may perhaps warrant me in offering to the section a few remarks on the acoustic principles of means used in auscultation, and on the best mode of applying them with efficacy and convenience.

Laennec, the inventor of the stethoscope, had no accurate views of the principles of its construction. He declared that the instruments which he found the best, were not made according to the commonly received laws of physics. Yet experience taught him that the solid cylinder does not convey breath sounds, or voice sounds, so well as the cylinder perforated and hollowed at its pectoral end. Many years ago I pointed out that this fact, which is unquestionable, is in perfect conformity with a law of acoustics, that sounds are best conducted by bodies of an elastic tension resembling that of the sonorous body. On the other hand, bodies differing in elasticity are bad recipients of each other's vibrations. Thus wood, although an excellent conductor of sounds generated in itself, or in other solids, receives but imperfectly those produced in air. But by thinning wood, and extending its surface in contact with air, it is much more readily affected by the vibrations of air, and becomes the best medium for transferring to air the sounds of denser solids; and this is the principle of sounding-boards.

The view which I originally gave of the principle of the stethoscope represented its operation as varying with the source of sound: sounds produced in air (vocal and breath-sounds) being best transmitted by an enclosed column of air; those produced in solids (rhon-

chi, heart, and friction sounds) being most effectually communicated by rigid solids of the least density. This view I still hold; and I proceed to remark on the best mode in which the principle may be brought into operation.

It has been lately questioned that the conducting power of the stethoscope depends at all on the air contained in the central canal and excavation. This doubt has arisen chiefly from an observation first made by Dr. Cowan, that plugging the central canal does not much impair the power of the instrument. Professor Forbes has repeated the same remark. I have made many experiments on this point, and the following are some of the results.

Stopping with a cork the pectoral end of the instrument greatly impairs its conducting power; stopping the ear end does so in a much slighter degree. But in any way stopping the tube does impair the transmission of sound; and to be assured of this, it is not sufficient to judge by general impressions as to whether a sound is louder in one way than in another: we must resort to what may be called a *test sound* (as opticians use a test object); a sound just within the limits of audibility, such as the sound of expiration in a healthy subject, or a very faint cardiac murmur. When tried by such a test, the superior conducting power of the open tube becomes obvious. But the impeding effect of a stoppage in the tube becomes most evident in the flexible stethoscope, a cork inserted into the pectoral end of which altogether shuts out faint sounds, and very perceptibly impairs those that are louder.

That the common stethoscope really conducts by its closed column of air as well as by its solid walls, is further proved by the following facts. Loud pectoral sounds, as that of the voice, heart, or a murmur, may be heard by bringing the ear end near the ear, without actual contact: the sound is then exclusively conveyed by the air, and may be totally intercepted by a plug. If a large hole be made in the side of a stethoscope, its conducting power is greatly impaired, especially for areal sounds; but it is at once restored by closing the hole with the finger. The difference depends not only on the exclusion of extraneous sounds by the

* Edin. Monthly Journal of Medical Science, July 1841.

latter expedient, but also, and chiefly, on the superior power of conduction which a closed column of air possesses. That the addition of solid conductor, by that which stops the hole, is not concerned in the improvement, is clear from the fact, that solid tubes of the most slender walls avail as well as thick ones, so long as they preserve a close column of air within them.

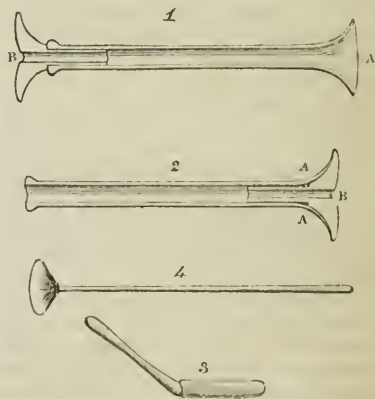
The closed state of the column of air is the chief condition necessary to give air a high conducting power. Following the assertions of acoustic writers, that the pulses of sound pass through the air in straight lines, like rays of light, I formerly suggested that the pectoral end of the stethoscope should be hollowed into a very tapering cone, and that the whole interior should be made as smooth as possible, to promote the most direct reflection of sound. But this principle is more applicable to ear trumpets, which receive sounds from the open air, than to the stethoscope, which receives vibrations from a solid enclosed surface. Air confined in a close tube vibrates as a whole, and its vibrations pass over angles, and through bends (as in a flexible tube), with a freedom which supersedes the idea of mere reflection; and although they must be transferred through a straight smooth tube more freely than through a crooked and rugged one, the difference is less than might be expected without a knowledge of the properties of close tubes.

The chief object in the formation of the hollow end of the instrument is to bring into close contact with the walls of the chest as large a surface of air as possible, and to convey the pulses of this air as directly as possible to the ear. It is at the same time desirable to avoid a large hollow within the instrument; because such a hollow causes a conch-like or tinkling echo, from the repeated transverse reflection of the vibrations. A conical cavity answers very well for the sounds best transmitted by the air; but a trumpet end does not appear to be inferior, and it answers better for the communication of vibrations to the solid part of the instrument.

I have before noticed the inferior power of a solid stethoscope. Some writers, who consider the stethoscope to conduct only by its solid walls, ascribe this inferiority to the weight of

its mass, and suggest that if this be reduced by hollowing, the closed solid is still the best instrument. To test this principle I had a thin stethoscope made of light deal, and closed at its pectoral end by a very thin plate of the same material: this proved to be decidedly inferior to instruments with an open bore*. Yet this instrument reversed, with its closed end applied to the ear, and its open end on the chest, communicated all diffused sounds uncommonly well: this can be explained only on the principle of the large surface of the hollow of the instrument enabling the solid part to receive the vibrations.

But finding the considerable share which the solid walls of stethoscopes have in communicating sounds, and finding by experiment that their efficacy depends chiefly on the formation of their pectoral end, by which they receive the vibrations, I have devised a form of instrument which qualifies them for this purpose better than any instrument now in use. It is the bugle or trumpet end (as seen in fig. 1, A),



the edges of which being made very thin, and applied flat on the walls of the chest, are most readily affected by their vibrations. The instrument thus constructed, of a light rigid wood, such as sycamore, if tried with a test sound, will be found for most purposes superior to the stethoscopes hitherto used.

* The same inferiority is manifest in a light solid instrument, which I have seen used by one or two practitioners.

But most stethoscopes are provided with a perforated stopper, the chief use of which is to shut out diffused sounds, and to transmit by the central canal aerial sounds, from a limited spot: it is thus of great use in distinguishing pectoriloquy from diffused bronchophony. I find that the same object can be pretty well attained by reversing the new stethoscope, applying the ear end (u) to the chest, and the hollow end (A) to the ear: this end having some extent of flat surface, fits the ear very well, and is not hollow enough to produce much conchal sound.

An inconvenience at first experienced with this instrument was its fragility, being easily cracked or crushed in the pocket. This evil is readily obviated by making the ear end (u, as seen in fig. 2) to take off and to fit into the hollow end (A); which thus not only strengthens the thin part, but also renders the instrument more portable. For this purpose, and for that of shutting out diffused sounds, the ear end should be made stout, and of a tough material, as box or yew wood.

The stethoscope in its packed or portable state (fig. 2) is well adapted to render visible the extent and direction of the pulsations of the heart or arteries, and of the motions of respiration. Held by its broad end as a base firmly applied to the chest, its small end exhibits, in an exaggerated degree, the movements of its base. Laennec used to exhibit the impulse of the heart by the lifting of his stethoscope; but this instrument does this much more exactly, and likewise shews the direction of the impulse.

As the flexible stethoscope has been recommended by some respectable authorities, (although I believe that it is very little used,) I take this opportunity to state my objections to it, which are founded on considerable experience in its use; for since Dr. Stroud, who first employed it, recommended it to me seven or eight years ago, I have given it repeated and varied trials. When tried by a test sound, I have found it much inferior in conducting power, for all the more delicate sounds of the breath and heart. Louder sounds, such as those of bronchial or cavernous breath and voice sounds, it exaggerates by the addition of a conchal echo, which renders it very difficult to distinguish them from each

other. It is much better adapted for the heart sounds, and is certainly the best instrument for exploring venous and arterial murmurs, because it may be applied with a less degree of pressure than the common stethoscope. The chief advantage, however, is in its flexibility, which permits it to be applied to the patient in postures in which the straight stethoscope can scarcely be used. On the other hand, it has the inconvenience of requiring the use of both hands to keep it applied; so that the auscultator has no hand free to prevent the friction and contact of the clothes, &c., or to steady himself whilst he leans over the patient. On the whole, although I often employ the flexible instrument for particular purposes, I am of opinion that no one who uses it only can be an accurate auscultator.

Percussion.

Since I explained the principle of percussion in 1835, I have had almost daily opportunities of proving the accuracy of that explanation, and of deriving advantage from the varied modes of percussion which the clear understanding of the principle suggested. So delicate do I now find this test, that in many instances it discovers disease when other physical signs are negative.

The principle is briefly this: sound on percussion is derived from the elastic tension of the bodies which the stroke reaches, and depends on the conjoint vibration of these. Thus gentle percussion, and flat percussion, reaches the superficial parts only, and is toned by them: forcible percussion derives its sound from deep-seated parts also.

The character of the stroke-sound varies not only in loudness and clearness, but also, and most constantly, in *pitch*; the *deepest tones* being the healthiest in all cases, except a few of flaccid emphysema and pneumo-thorax. In some cases of pneumonia, pleurisy, and even tubercle, the stroke sound is much louder on the diseased than on the healthy side; this is where the clearness proceeds from the resonance of the subjacent tubes, which the condensation of the tissue of the lung enables the stroke to reach. But in all these cases the morbid character of the sound is proved by its note being higher than on the healthy side.

In cases of early phthisis, in which the auscultator may be doubtful as to the comparison of stroke-sounds of corresponding points on both sides, he may sometimes be assisted by applying his ear to the chest at the same time that he strikes. Thus, in exploring below the clavicles, he may use gentle immediate percussion there with the fingers, whilst he applies his ear in the scapular region; but on comparing the sound with that of the opposite side, he must be careful to listen, as well as to strike, on corresponding points. Explored in this way, the clearness or loudness of the stroke is less easily distinguished than the note or pitch, the difference of which is sometimes manifest when it is not so in the usual mode of examination.

In percussion of the abdomen, it is useful to employ different degrees of pressure with the pleximeter or the hand struck. Strong pressure with forcible percussion, displaces the superficial contents (gas and liquid), and elicits the sound of deep-seated parts. On the other hand, the gentlest percussion, without pressure, will detect the superficial dulness of a layer of serum too thin to be palpable by fluctuation.

For general purposes, I consider the fingers to be the best instruments for percussion; and the various ways in which they may be used constitute one of their best recommendations. There are, however, a few cases in which an instrument for percussion will give more accurate indications; and I will describe one which is very efficient as well as very simple.

Perussion-plates, generally, are too large to be applied closely between the ribs; and when made of hard materials they cause a clacking noise by the stroke on their surface. The hammers of Drs. Burne and Winterich are not only formidable in their appearance (that of Dr. Burne is really frightful), but their strokes may vary in force, and their sounds in character, according to the direction in which the hammer falls, whether quite perpendicularly or not.

To avoid these objections, I have for a pleximeter a stout narrow piece of whalebone (about four inches long, Fig. 3), slightly bent by heat, so that one end forms a handle, whilst the other is applied to the chest;

the latter part may be covered with buff leather and velvet, to deaden the clack of the surface. The hammer (Fig. 4) is made of an oblate spheroid of lead (three quarters of an inch in long diameter) also covered with leather and velvet, with a small rod of whalebone (four or five inches long) for its handle. The pleximeter fits like a finger on or between the ribs, and is firmly and conveniently applied to any part. The hammer head being circular, like that used by geologists, can scarcely vary in the direction of its stroke, and has weight enough to elicit deep-seated as well as superficial sounds with very little force of stroke. The elasticity of the handles of both greatly facilitates their operation.*

7, Holles Street, Cavendish Square,
Dec. 1842.

DROPSY IN EARLY LIFE.

To the Editor of the Medical Gazette.

SIR,

THE following case of dropsy occurring in early life, with its dissection, appears to possess some points of interest, and I should feel obliged by its insertion in your journal.—I remain, sir,

Your obedient servant,

COTTON BELCOMBE.

Minster Yard, York, Nov. 8, 1842.

Rebecca Berry, ætat. 13, from the Grey Coat School, admitted in the York County Hospital under the care of Dr. Belcombe. The girl had no complaint of illness up to the period of her admission. Had taken her meals, and done her tasks as usual; but her body being accidentally discovered to be enlarged, my father, as physician to that institution, was requested to see her by the surgeon, Mr. Short, and perceiving a distinct fluctuation, he recommended her removal to the hospital. She was placed upon a course of mercurials and diuretics, without the slightest effect; and the abdomen increasing so rapidly as to cause much distress, it was determined on consultation to have recourse to paracentesis, which was accordingly performed, and seven quarts of a pale, yellow, clear, serous fluid withdrawn. On examination, after the operation,

* These instruments may be obtained from Coxeter, near University College, and from Grumbridge, 42, Poland Street.

the liver was found considerably enlarged, projecting for some distance below the ribs, and crossing over into the left hypochondrium. The plan adopted for reducing this viscus, though steadily persevered in, had no effect; and on the 12th of August, the necessity of paracentesis being sensibly developed, it was again performed, and eight quarts of a similar fluid withdrawn.

On Sept. the 5th, ten quarts were removed. Symptoms of general distress of the system now unfolded themselves; but, in spite of all attempted measures of relief, it was deemed absolutely necessary on the 22d again to have her tapped, when eleven quarts of a fluid, redder at first than the preceding, afterwards of the same character, came away. For the first time she bore the operation badly: fainted twice, had a shivering fit upon being removed to bed, and appeared much exhausted. She died the next day at 10 A.M. The inspection was made twenty-four hours after death by Mr. Procter, the house-surgeon, who has kindly furnished me with the details.

Autopsy.—On opening the body a considerable quantity of bloody serous fluid escaped. Peritoneum thickened, of the dull pinkish-red colour of strumous inflammation, granular and roughened to the feel, covered with white specks (apparently of deposited lymph) about the size of a split pea; the mesentery and transverse arch of the colon were firmly adherent to the abdominal parietes: the intestines were of the same colour, but only adherent in some places. *Kidneys:* these were rather congested, but perfectly healthy in structure, though rather smaller than is usually the case. *Liver:* this viscus extended laterally across the epigastric to the left hypochondriac region, and into the right hypogastric and umbilical regions. Right lobe was chiefly enlarged; its anterior surface was hard and tuberculated; its colour externally reddish pink, with the peritoneal covering much thickened. Inferior surface was occupied by a large cyst about the size of a foetal head, arising apparently from the lobulus Spigelii. Fluctuation was quite distinct. Projecting from the right edge, but placed rather inferiorly, was another cyst somewhat less in size. On opening the larger cyst, it was found filled with a yellow viscid fluid,

in which floated numerous small hydatids (the hydatid acephalocystis) of a round form, and varying from the size of an ordinary shot to that of a pea, translucent, and containing a clear fluid, like water: they were all perfectly distinct. The parietes of the cyst were firm; the external coat being dense and fibrous, the internal soft and pulpy. On cutting into it, the contents quickly exuded, as if the cyst was in some measure contractile: within this cyst was a smaller one, quite unattached, and readily torn: it had a white but soft external coat, and an internal, rough and spongy: it contained a yellowish watery fluid, in which small portions of lymph floated. The lungs and heart were perfectly healthy, and of the usual size.

One point observable in the case appears to be, such a remarkable growth of disease taking place with so little sensible effects upon the general economy. The most minute inquiry has failed to obtain any supposition that the girl was ill up to the time when the increase of size in the abdomen was accidentally noticed. Hydatids have been often described as connected with disease of the liver; but I am not aware of their having been detected in a child so young; and I have looked over several pathological writers in vain for any account of an ascites requiring the operation of paracentesis at such an early age.

MERCURY IN ILIUS.

To the Editor of the Medical Gazette.

SIR,

If you should deem the accompanying case, evincing the value of crude mercury in "Ilius," of sufficient importance for your pages, it will oblige, sir,

Your obedient servant,

T. G. ATKINSON.

Wakefield, Nov. 10, 1842.

Samuel Pass, æt. 8½, the subject of this note, was first visited by Messrs. W. and S. Holdsworth, surgeons of this town, on Tuesday, the 13th of September. The following symptoms presented themselves to their notice.

Incessant vomiting, nothing remaining on the stomach; abdomen much distended; violent pain round the um-

bilious; constipation for three days previous to this date; no increase of pain by pressure; and, by further enquiry of his mother, she alleged the fact of his being in the habit, (for amusement sake) of standing on his head occasionally during the last few weeks; leading to the conclusion that the case was one of obstruction of the bowels.

The treatment consisted in the administration of croton oil, and other drastic cathartics, with various "enemas," and the patient continued in this state, with the exception of the first enema bringing away a quantity of scybala, until,

16th, Friday; when all the symptoms were augmented, with the addition of his now vomiting feculent matter. Tobacco infusion of double the usual strength was given by enemas, but came away unmixed with faeces, soon after having been injected.

17th, Saturday.—Was bled this morning, in order to relax the parts if possible. Complete syncope did not succeed the venesection; blood did not evince inflammatory indications.

When I first saw him on this day, his pulse was quick and feeble; strength greatly prostrated; countenance anxious. His case appeared hopeless.

We ordered him brandy, and other stimulants, and four ounces of quicksilver, which dose was repeated during the evening, four hours after the first. The mercury was rejected from the œsophagus once or twice before it would reach the stomach. He never vomited after this day; except some milk, which he was improperly allowed to take in too large a quantity; but the other symptoms were not much alleviated.

19th, Monday.—On this day eight ounces more of quicksilver were given with henbane, to alleviate the spasm. The mercury at first caused an increase of pain, but in the course of three hours all his symptoms were at once relieved, although the bowels were not evacuated until the

22nd, Thursday; when a copious stool was passed; since which time he has gradually recovered, without any drawback. Thirteen ounces of the quicksilver have passed at intervals during the succeeding fortnight.

The peculiarities of this case seem to be—1st, the origin of the disease;

2d, the fact of the relief of the symptoms as soon as the mercury appeared to reach the obstructed part, although no stools passed per anum for three days after this period.

EFFECT OF MENTAL IMPRESSIONS ON DISEASE.

To the Editor of the Medical Gazette.

SIR,

IF you deem the following cases and remarks, illustrative of the effect of mental impressions on bodily disease, worthy of a place in your valuable journal, they are at your service, and

I am, sir,

Your obedient servant,

JOHN HITCHMAN.

Dec. 9, 1842.

R. T., an active man, single, æt. 21, had been suffering two days and a night from pain in his bowels, accompanied by vomiting. Calomel and opium had been given, and hot fomentations used without success. The pain and sickness continued. When I saw him he was resting on his back with his knees drawn upwards. His countenance indicated pain. He complained of being exceedingly weak, and of pain in his bowels. The skin was hot and rather dry; the pulse small, contracted, and quick,—120 in the minute; respiration difficult and frequent; the tongue rather dry and white; sickness after taking any thing; bowels costive; urine scanty; had been wayward during the night, and complained of headache at the time of my visit; no derangement of the pupil; no intolerance of light, no tinnitus aurium. The stethoscope revealed no pulmonary disease. On placing my hand upon the seat of pain, the umbilical region, I found the integument very hot, and the pain much increased by pressure. I viewed this as a case of peritonitis, and proposed an immediate loss of blood by venesection. To this the patient strongly objected. Leeches were then recommended, but of these he was equally afraid. On strongly urging, and insisting on these, the patient became much frightened, and partial faintness followed. The pulse permanently fell, and from that moment the pain and sickness disappeared; the bowels were acted on, and

in a few days the patient was quite well, without the loss of a single drop of blood. No calomel had been taken for thirty-four hours prior to this, so that the result may be fairly ascribed to the mental influence.

The next case is of a different character, and came under my notice on Nov. 21, 1841.

J. T., æt. 47, married, had been ill for six months. He now laboured under the impression that he had syphilitic disease accompanied with a discharge from his urethra. After gaining his confidence, I found that he had been professedly a religious character, but that in a frail moment he had yielded to the charms of a prostitute, and violated his marriage vow. Remorse followed; he could not sleep; walked about the room at night; neglected his business, and from a cheerful, became a gloomy man. As he concealed the cause, his altered conduct was attributed to mental derangement. After a time dyspeptic symptoms set in, and these, under the influence of an upbraiding conscience, he metamorphosed into, or rather imagined to be, "the foul disease." This increased his mental distress, and his conduct became so strange, that medical advice was called for. As the patient did not reveal the cause, his conduct, and the representations of his family, deceived the medical attendant, and he regarded it as a case of mental derangement. Bleeding to a great extent was resorted to, in opposition to the patient's will. His remonstrances, and his passionate resistance to being bled, were so many additional proofs of his insanity. He was in the constant habit of pressing his urethra to detect a discharge, and as he occasionally found a very slight moisture, the result of his own irritation, he was confirmed in his erroneous impressions; and when after weeks had elapsed he expressed his fears as to the real nature of his malady, (without admitting his by-gone guilt), and the parts were found quite healthy. This was deemed another delusion, (as it most certainly was) and monomania. It was an erroneous impression on the part of the patient, but the misery occasioned by it, and the treatment to which he had been subjected, had so undermined his health, that when I saw him his mind was despon-

dent; his countenance was pallid; his muscles weak and flabby; his tongue furred; his breath offensive; his respiration easily accelerated; his pulse languid, and occasionally intermittent; and his feet were swollen. His bowels were acted on daily, but there was tenderness over the right hypochondrium, and the urine deposited a pinkish sediment (parpurate of ammonia?) on the vessel which contained it. He had been salivated six weeks before. I examined the organs of generation, and found no trace of syphilis, or the presence of gonorrhœa; but knowing that it was impossible to convince him, other than that his symptoms were "the foul disease in his blood," I assured him it would be removed by injecting a fluid into his urethra. This pleased him much. A syringe was provided, and an injection, consisting of a pint of water, and five drops of *sp. lavand. comp.* Of this he used a syringeful three times a day. The history of the case suggested the treatment. The dyspepsia following, not preceding the remorse, his erroneous impression arising out of the bodily ailment, being confirmed by it subsequently (aided by a clear knowledge of having run the risk of contagion), his unwillingness to confess the primary cause of his distress to his family medical attendant, while he readily did this to a stranger, induced me to try to soothe the mind by attending to his ideas, though erroneous, rather than attend exclusively to the corporeal feelings, however real and evident. In the meantime he took grain doses of blue pill, with a grain of ipecacuanha and three of rhubarb at night, and the following mixture in the day.

℞. Decoct. Aloes Comp. ʒij. ; Spt. Ammon. Aromat. ʒiiss. ; Mist. Camphor. ʒv. ʒvjss. M. Cap. 6tas partes bis in die.

Under its use, with a moderately nutritious diet, his mind, from being restless, desponding, and suicidal, became tranquil and cheerful, his bodily health returned, and in a few weeks he was fit to pursue his ordinary duties as a shoemaker. The pills were continued a week and the mixture a fortnight, but to the injection he ascribed all his benefits; and the probabilities are, that without it, something appearing directly to combat the imaginary

disease, no good would have been effected by medicine, however appropriate to the disordered state of the chylopoietic viscera.

FATAL DISEASE INDUCED BY HYDROPATHIC TREATMENT.

To the Editor of the Medical Gazette.

SIR,

IF the enclosed case, with the remarks, be considered worthy of insertion in your periodical, it is quite at your service.—I am, sir,

Your obedient servant,

THOMAS H. SILVESTER, M.D.

29, Sackville Street, Dec. 12, 1842.

The science of medicine is so extensive, and the facts on which it is founded are so numerous, that it would appear to surpass the powers of the human mind to master, and to entirely comprehend, the whole subject; and yet a German peasant, buried in the obscurity of the mountains of Silesia, pretends to have discovered not only the spring of every morbid action in the human frame, but a sure and certain cure likewise for all the diseases which human flesh is heir to.

The following case will be sufficient, I think, to convince any reasonable person that the hydropathic system of treatment is not always unattended with danger: one may even go further, and declare, that in the present instance a disease of an acute and mortal character was engrafted on that for which the water had been prescribed.

A gentleman who had been residing at a hydropathic establishment on the Rhine, and had gone through the whole process of "the cure," as it is called, returned to this country still suffering from the peculiar eruption or crisis. He said, that nothing could be more pleasurable and exhilarating than the various kinds of baths employed, and that he seemed to derive much advantage from their use. The internal administration commenced by the patient taking two tumblers of water during the day; the dose was gradually increased until it amounted to twenty-five tumblers in the same period. Abscesses began at the end of a month to make their appearance on several parts of the body; these were exceedingly painful, so much so as to

render his days wearisome and his nights sleepless: he was told, in answer to the complaints which he made on this head, that the eruption constituted the crisis, and that the morbid elements having undergone the necessary coction, were about to be eliminated, and cast out of the system through these artificial channels, and that, instead of sympathy, he deserved the congratulations of his friends at the fortunate termination of his disease, and consequent restoration to perfect health. He determined, however, after having suffered great pain, with feverishness and exhaustion, for nearly a fortnight, to return home. This he accomplished with some difficulty. I visited him immediately on his arrival. He first drew my attention to an abscess on the wrist; it was of a livid hue, about as large as a walnut, exquisitely tender to the touch, and a bloody sanies streamed from several distinct apertures on its surface.

Another, of a similar character, but as large as a hen's egg, was situated in the perinaeum; a third, of almost equal size, occupied the pubic region: many others were to be seen on the body and extremities. They did not, in their mode of distribution, appear to submit to the law of symmetrical arrangement: not one was to be found on the left half of the body. Interposed between the larger specimens were many of smaller size, and some so diminutive as scarcely to deserve the name even of abscesses, being merely deposits of pus under the cuticle. Every effort was made to restore the debilitated constitution of the patient; but in vain. Abscesses continued to break out anew, about the hand and wrist; the absorbents became inflamed, along the internal face of the arm, as far as the axilla, and the patient, at length worn out with intense suffering, sank—a victim, shall I say, to the water cure?

Medicine is a science founded entirely on experience and observation; by the aid of these tests we shall soon be able to ascertain the precise value of hydropathy. One thing is very certain, that it will have to recede from its present high pretensions, and to undergo great modification, before it can be regarded as a valuable addition to our rather heterogeneous stock of remedies.

HERNIA AT THE OBTURATOR FORAMEN.

To the Editor of the Medical Gazette.

SIR,

I beg leave, with your permission, to put upon record in your journal the following rare case, which lately fell under the notice of myself, Dr. Allen, and John Lawrence, Jun. Esq. surgeon, of this town.—I am, sir,

Your obedient servant,
W. KING, M.D.

Brighton, 10th December, 1842.

Mrs. W., æt. 76, the mother of several children, had complained for about a year of pain in the left groin, in the course of the obturator nerve, and of cramp in the left thigh and leg. About a fortnight before her death, she was seized with pain in the lower part of the abdomen, vomitings, not stercoraceous, and total stoppage in the passage of the bowels. On examination after death the following facts appeared. Adhesion of the lower edges of the omentum to the edges of the bladder and left rim of the pelvis; hernia of the small intestine at the obturator foramen, strangulated between the bone and the obturator externus muscle, and beginning to slough; the nerve and artery lay behind; acute peritoneal inflammation of the small intestines, but no lymph or effusion.

The preparation is deposited in the Museum of the Brighton Hospital.

A concise account of the few cases on record may be seen in Mr. Lawrence's book on Ruptures, chap. 23, 2d edition, 1810.

CASE OF

DISLOCATION AT THE KNEE-JOINT.

By FRANCIS ADAMS, Esq. Surgeon.

(For the Medical Gazette)

SEPT. 10th, 1842.—Alexander Robie, æt. 55, while in the act of carrying provender between two large bullocks in their stall, was knocked down by a stroke of one of their hind legs on the right knee, and while lying on the ground was severely injured by being trod upon in several parts of the body, especially near the middle of the right leg. I saw him about two hours after the accident, and found the bones of

the leg lying on the fore part of the femur, so that the cuticular cavities could be distinctly felt, while below the contour of the condyles could be evidently traced: in short, I never saw a case of dislocation in which the symptoms were so strongly marked. The patella was pulled considerably up the thigh, but it appeared pretty obvious that neither the *ligamentum patellæ*, nor the tendon of the quadriceps, was torn. The limb was extended. From the mobility of the parts, and the great separation between the ends of the tibia and femur, I was impressed with the conviction that the lateral and other principal ligaments of the joint must be torn. By making extension and counter extension, the reduction was effected with little difficulty. The limb was then bandaged loosely from the toes to near the middle of the thigh, and laid half bent on a thick pillow, and evaporating lotions directed to be applied occasionally. For some days, no severe symptoms occurred in the joint; but swelling and suppuration having taken place in the leg, especially about its calf, the bandages had to be removed, and poultices applied. The limb continued very much swollen, with fetid discharges; and owing, perhaps, to its weight, the bones of the leg, about the twelfth day, were dragged downwards, so as then to give the knee-joint the appearance of a semi-luxation backwards. The limb was secured in the best manner that could be done in its tender state, and the bones retained in position by means of a jointed splint applied below the thigh and leg.

30th.—The limb has gone on daily getting into a worse state; the foot has lost its heat and sensibility, and the whole leg behind up to the knee is of a darkish-green colour. About the calf of the leg it is greatly swollen, and the discharge from it very copious. The joint is so loose that the bones can with difficulty be kept in position; the pulse about 115. He has agreed to have his limb removed next day if no improvement takes place in the interval.

Oct. 1st.—I amputated the limb to-day about the middle of the thigh, with the assistance of my professional neighbour, Mr. Walker. The patient bore the operation with great fortitude, and appeared, soon afterwards, much relieved from his sufferings. The mus-

cles felt so soft and flabby as to excite apprehensions, in my mind, that the vessels might not bear the ligatures well: no unpleasant symptoms, however, occurred, and the stump was completely healed in the course of three weeks.

We examined the parts about the knee-joint immediately after the operation. As I had formerly supposed, the tendon of the *quadriceps* and *ligamentum patellæ* were entire; the latter, however, much stretched and slackened; and, contrary to my expectations, I also found the lateral ligaments much torn. Upon cutting into the joint, the crucial ligaments were found to be torn in pieces, but all the other parts were uninjured; the posterior ligament, the heads of the gastrocnemius, and the popliteal vessels, being soft. The limb below being a general mass of suppuration and putridity, was but cursorily examined: it appeared certain, however, that the back part of the leg had been bruised to the state of a pulp: the condyles were somewhat smaller than natural, and were so rounded as to shew an unusual aptitude to slip out of the articular cavities; and to this construction of the solid parts, joined, perhaps, to some preternatural laxity of the ligaments, the accident may, no doubt, be ascribed.

This would appear to be one of the rarest dislocations to which the joints of the human body are subject. The only unequivocal case, which I know of as having been reported in this country, is the one related by Mr. Jonathan Toogood, in the *Provincial Medical Journal*, June 1842. Another, supposed of a similar nature, reported by Mr. Coote, he regards as probably incomplete. In these two cases recovery took place without any untoward symptom; as I have no doubt would have happened to my patient, had the injury been confined to the knee-joint. Mr. Toogood mentions, that neither Sir Astley Cooper, Dupuytren, nor Roux, had ever met with such a case, nor, as far as I can discover, do any of our latest writers on surgery mention having ever had occasion to treat this accident. Cheselden, although correct in stating that "the knee cannot be completely dislocated without breaking the *cross ligaments*" (Annot. p. 45) may be supposed, from the problematical way in which he expresses himself, to have

had no experience of such a case. Boyer also writes of the accident in equivocal terms, and is wrong in stating, that the heads of the gastrocnemius, and other soft parts, must necessarily be torn. Of the ancient authorities in surgery, Celsus alone makes mention of dislocation forwards: he says, "in priorem non prolabi plerique scripserunt: potesque id vero proximum esse: cum inde opposita patella ipsa quoque caput tibiæ continent. Meges tamen cum cui in precorem partem excidisset, a se curatum esse memorie prodidit." *Med. viii.*, 21. Hippocrates, the great ancient authority on fractures and dislocations, describes dislocations of the knee outwards, inwards, and backwards, but says nothing of dislocation forwards: and all the other ancient writers on medicine, both Greek and Arabian, report the same statement. In like manner, the earlier surgical authors in modern times, being all servile copyists of the Arabians, give the same account of dislocations at the knee—see Theodoricus, lib. ii., c. 52. As far as I can learn, the case which I have now related is the only one on record in which the state of the parts was ascertained by dissection.

Banchory, near Aberdeen,
Dec. 8, 1842.

ON THE
VALUE OF THE CORPUS LUTEUM
AND DECIDUOUS MEMBRANE
AS TESTS OF EARLY
PREGNANCY.

To the Editor of the Medical Gazette.

SIR,

IF from conviction I could alter my opinion on Dr. Paterson's corpora lutea, it would afford me the greatest satisfaction to do so: for I know from experience, that the pleasure of renouncing an error is only equalled by the delight felt on discovering a new truth. "A lamp-lighter," says Dr. P. "residing in the Cannongate, was indicted for the murder of his wife. It appeared that the parties had been married eight years, and had had no family. The man was a sober and decent person, while the woman was addicted to the use of spirits. Latterly she had become acquainted with a young man, whose frequent visits to her, in the ab-

sence of her husband, excited suspicions against them. This man (husband ?) in a fit of passion and jealousy, inflicted on her wounds which proved fatal. The uterine organs were removed at the inspection, and examined afterwards. The right ovary presented externally an enlargement of the size of an ordinary marble, of a dark purple colour, having several minute vessels ramifying on its surface, a distinct depression in its centre, and the appearance of a minute cicatrix. On cutting into it, the structure and appearance of a very early corpus luteum was observed, which was formerly described. The uterus contained an extremely soft decidual membrane, *but no ovum could be detected*, although minutely and carefully examined. Indeed, although this person had conceived, there can be little doubt, from the puckered and contracted appearance of the fimbriated extremities of the fallopian tube, which would hardly admit of a small probe to enter, that no ovum could have passed into them. In this case it is possible that the woman had conceived by her husband ; but it is more probable *that she had not*, and that the husband had great cause of provocation." "But let us suppose," adds Dr. P. "that the husband had been absent for a month or so, and had inflicted similar blows on his return, it would have become a question of the greatest importance to have determined not only if that was a true corpus luteum, but whether or not it was possible to have been produced—the result of a conception before his departure. Although this case is in so far imaginary, yet the circumstances supposed are very likely to have happened, and the appearances observed in the ovary, if carelessly examined, would either have been set down on the one hand as a clot of blood, or as bearing at least none of the marks of the corpus luteum as described by authors."

It is inferred from this singular history, although no ovum, nor any vestige of an ovum, could be detected on the most minute and careful examination, neither embryo, vesicula umbilicalis, amnion, nor chorion, that this murdered woman was pregnant, and that she was an adulteress. Not only is the pregnancy considered a fact of absolute certainty, but the red clot of blood in the ovarium, which does not present one

of the characters of a true corpus luteum, into the composition of which there does not enter a particle of yellow matter, is described as a corpus luteum "a very short time after the rupture of the Graafian vesicle and escape of the ovule." An ovule, which was never seen, is presumed to have escaped from this ovary, but, on dissection, though hunted out with the greatest care, it was no where to be found. My conscientious belief is, that a fecundated ovum never existed here at all, and that this woman, who had lived eight years with her husband and was barren, and whose internal uterine appendages were in a state which rendered pregnancy impossible, or at least highly improbable, died during menstruation. I have so often seen all the appearances here described in the ovaria and uterus of women who have never been pregnant, that I have no doubt of the fact. If I were summoned into a court of justice, I would have no hesitation in declaring upon oath, from the evidence furnished, that the proofs of pregnancy were wholly wanting. With this deep conviction upon my mind, I could not avoid drawing the attention of my class to this case, and imploring them to be cautious how they gave evidence in courts of law to criminate unmarried women who have committed suicide, or died suddenly from any cause. Upon no other ground would I have considered this case deserving of notice or criticism, for, as far as the structure of the corpus luteum is concerned, it proves nothing. Nobody has come forward with a testimonial in behalf of this corpus luteum, or asserted, that he saw two membranes around the coagulum of blood, and a layer of coagulable lymph in the centre, filled with a reddish grey-coloured fibrinous matter. The character of this corpus luteum is, in truth, gone for ever—far more completely blasted than the reputation of the poor lamp-lighter's murdered wife.

"The third figure," I observed, "represents the appearances presented by an ovarium removed from the body of a woman who died of chronic disease of the brain. Here also no ovum could be detected by Dr. P. in the uterus, upon minute microscopic examination to determine that pregnancy had actually taken place, although he infers that "impregnation had occurred

from a fortnight to three weeks before death. If you examine this figure you will see that there is no capsule interposed between the yellow matter and stroma of the ovary: and the same is the case with the fourth figure, [exhibiting it] which represents a *true corpus luteum* in the second month of pregnancy. Dr. Allan Thomson says, in his description of the corpus luteum, that a cavity existed in the interior of this corpus luteum similar to what is seen in all true corpora lutea: but Dr. Paterson says this statement "is erroneous, as its centre was filled up with a reddish grey-coloured fibrinous mass. In figure 5 the Graafian vesicle is seen distinctly within the yellow matter, and this, you see, is in immediate contact with the stroma of the ovary, although Dr. Paterson says, in his description of it, that external to the yellow body was also a firm membrane."

Dr. Reid, of St. Andrew's, vouches for the authenticity of these three last corpora lutea, though no ovum was found in the uterus connected with the first; but he prudently abstains from committing himself with the others. Dr. Reid affirms that Dr. A. Thomson was perfectly correct in stating that there was a central cavity in the fourth corpus luteum, "though," he adds, "there can be no doubt, as any one may readily satisfy himself by looking at the preparation in my possession, that there could be none;" and that Dr. Thomson meant only to say "that the true texture of the corpus luteum occupied the surface of the body only, and did not extend through the centre."

But Dr. P. says, "the uterus of this case (woman?) was a little enlarged, and contained an extremely thin and soft decidual membrane." The utter worthlessness of the decidua, as a test of pregnancy, found "in the uterus of this case," (!) will easily be estimated from the following quotation from Dr. Blundell's Lectures, and also the real value of the microscopical researches determined, which have led to the revival of an antiquated and exploded error, viz., that the decidua is nothing but the altered mucous membrane of the uterus." The decidua is sometimes produced in cases of difficult menstruation; and it is important to remember that it may be mistaken for abortion. It resembles it in the pains, discharge of blood, &c. *But the*

one presents an embryo at various stages of increase, while in the other that is altogether wanting. It seems now agreed, that the discharge of this membrane (recognised by Dr. Baillie to be similar in structure to the decidua) occurs frequently in unmarried females. It would appear to be generated spontaneously by the inner membrane lining the uterus." I could quote twenty other authors of reputation to the same effect, if I had time, or considered it worth the trouble.

I am, sir,
Your obedient servant,
ROBERT LEE.

14, Golden Square, Dec. 12, 1842.

ON MYOPIA.

By W. CLAY WALLACE, M.D.

New York.

(For the London Medical Gazette.)

THE average point of distinct vision is from fifteen to twenty inches from the eye. When an individual cannot see distinctly at this distance, but requires to hold the object nearer, he is said to be short-sighted; or if he must remove the object to a greater distance, he is said to be far-sighted.

Causes of myopia.—The causes of this defect have been usually ascribed to—1. too great convexity of the cornea; 2. too great thickness of the cornea; 3. too large a size of the anterior chamber; 4. unusual convexity of the crystalline lens; preternatural density of any, or of all the transparent media; 5. preternatural elongation of the eyeball; 7. a dilated state of the pupil; and 8. alteration of the position of the crystalline lens.

1. Too great convexity of the cornea may, and often does, produce near-sightedness; but "it is also certain," observes Dr. Mackenzie, "that this conformation is by no means a *common*, nor even a *frequent*, attendant on the disease."

2. It is not probable that unusual thickness of the cornea is ever of itself the cause of the complaint.

3. Too large a size of the anterior chamber would, if that were all, remove the crystalline farther from the cornea, and thus produce far-sightedness.

4. Percy and Reveillé Parise exa-

mined the eyes of subjects who had been short-sighted when alive, without being able to observe unusual convexity of the crystalline: besides, myopia and presbyopia are sometimes suddenly produced, and sometimes suddenly removed—effects which could not possibly take place if the complaints arose from altered configuration of the refractive media.

5. Though the eyes of myopes are firmer than usual, it would be difficult to shew that the media are so increased in density as to produce the complaint.

6. No case of myopia arising from preternatural elongation of the eyeball, unaccompanied by conical cornea, or partial staphyloma, has been shewn to exist.

7. We often observe the pupil to be preternaturally dilated, without near-sightedness; besides, if the aperture be expanded by stramonium or belladonna, an opposite effect, or far-sightedness, is produced.

8. From what follows it will be seen that malposition of the crystalline is the most frequent cause of the complaint.

For a clear understanding of the causes of myopia and presbyopia, it is proper to inquire into the method by which the eye is accommodated to different distances, as the necessity for some means of adjustment is proved by the analogy of the organ to other optical instruments, and by a number of experiments.

Adjustment has been referred—1. by some to alteration of the diameter of the pupil; 2. by a few to muscularity of the crystalline lens; 3. by a greater number to pressure of the external muscles changing the convexity of the cornea; and 4. to alteration of the position of the crystalline lens.

1. Since the days of Baptista Porta it has not been denied that the eye is constructed on the same principle as the camera obscura: consequently, alteration of the diameter of the pupil can have no more effect in adjusting the eye, than alteration of the diameter of the aperture of a camera obscura in producing a distinct image, which is solely effected by sliding the lens backward or forward till it is brought to a focus. When a person endowed with the usual powers of vision looks at a near object, the pupil is observed

to contract; whereas, in a myope, it is often preternaturally expanded.

2. The fibres of the crystalline lens are totally different from muscular structure; and if they really did possess contractility, there is no point of attachment from which they could act. In a certain species of hawk, the crystalline is a plano-convex, and it is in all animals so exquisitely cut, if I may use the expression, that the irregular action of muscles would produce irregular refraction. In aquatic animals, where the crystalline is dense, the fibres are separated from each other with so much difficulty, that it is not probable they could slide over each other in such a manner as to produce the effect. Moreover, Sir D. Brewster has ascertained that in these animals the fibres of the crystalline are locked or dove-tailed into each other by a species of teeth, which would prevent any change in the configuration of this refracting medium.

3. The external muscles of the eye are adapted solely to move the organ in different directions. If adjustment depended on them, the focus would be disturbed with every motion; whereas we can look steadily at an object, and even roll the orbit round the eye, without changing the image on the retina. After the operation for strabismus, the eye can be adjusted as well as before it, even when one of the obliqui has been divided, and after the operation for cataract, though the muscles and the cornea are as perfect as ever, the power of adjustment is lost; glasses of different powers being necessary to view near or distant objects.

It is admitted that the eyes of all animals are constructed in adaptation to the known laws of the refraction of light; that rays will deviate from straight lines, and be collected in a focus, only when they pass to a denser medium. Now, granting that pressure of the external muscles produced increased convexity of the cornea, rays of light proceeding from an object under water to the eye of an animal inhabiting the same fluid would not by that means pass to a medium materially denser, and would not be sufficiently refracted to make any change of adjustment. The very dense and convex crystalline of an animal which inhabits the water is the only medium

by which the rays can be collected in a focus on its retina. Increased convexity of the cornea could not be produced in the eyes of some animals, for the sclerotica is occasionally so firm, that no pressure of the external muscles could alter the form of the cornea. In the sturgeon the sclerotica is cartilaginous, and in thickness about one-fourth of the diameter of the eyeball; while firmness is given to the sclerotica of the sword-fish by a covering of bone.

4. When the camera obscura is directed from a remote to a near object, it is customary to adjust the instrument by drawing forward the lens rather than by altering the position of the ground or screen. The opinion that adjustment is effected in the eye by the same means, was advanced by Kepler, and supported by Porterfield, and afterwards by Knox, though neither of them has satisfactorily explained how the change could be effected.

It will now be shown that the crystalline is made to approach nearer the cornea when viewing near objects, and to recede from it when viewing distant objects; and consequently, that myopia and presbyopia frequently arise from malposition of the same refracting medium; or, in other words, that the crystalline is placed too far forward in the former, and too far backward in the latter complaint.

The form of the crystalline in animated beings is either a double convex, a plano-convex, an oblate spheroid, a sphere, or a prolate spheroid. When the crystalline is a perfect sphere, there is no aqueous humour, there is no canal of Petit, there are no ciliary processes, nor ciliary muscles. The sphere is suspended by a filament, and kept in position by the membranes of the vitreous humour, some of which pass through a slit at the lower portion of the retina, and are fixed to the choroid. Attached to the capsule covering the lower portion of the sphere there is a muscle which, though it varies in shape and size, is very conspicuous in the halibut, the striped bass, and the dolphin. In the halibut it is hatchet-shaped, attached to the iris, and placed diagonally across the eye; whereas in the dolphin and striped bass it is triangular, and passes through a loop at the

back of the iris, to be attached to some of the membranes of the vitreous humour. This muscle is supplied by a large branch of the 3d pair of nerves, which is said to be analogous to the 5th pair of the mammalia. When the muscle contracts, the crystalline approaches the cornea, and is adjusted to near objects, while it (the crystalline) is drawn back or adjusted to distant objects by the elasticity of the membranes of the vitreous humour, the firmest of which pass through the slit in the retina before mentioned. The slight rotatory motion produced by drawing the crystalline forward, from only one point of attachment, can have no effect in varying the image, as the diameters of a sphere are always the same.

That some have asserted there is an apparatus for adjustment in fishes is stated by Porterfield, who denies that there is any such arrangement, though he does not mention the name of the author. In my published papers I have stated, that the body attached to the crystalline had been noticed by Haller, by Cuvier, and others. I pointed out its muscular appearance, its being supplied with a distinct nerve, its attachments, and evident use. If some of my publications have been premature, I am not alone, for in the London Magazine of Natural History for 1838, there is the following statement by Professor Dahrymple, of Sydenham College:—

“Some few years ago, while examining the organ of vision in a pike (*Esox lucius*) I observed a small roundish grey-coloured body, about the size of a hemp seed, attached to the circumference of the lens; and at the same time, certainly without due consideration, I designated it a muscle, principally from the fact that I traced a nerve running from the posterior part of the eye to this peculiar body. The preparations then made I exhibited to some young American gentlemen attending the practice of the Moorfields Ophthalmic Hospital.

“That the existence of this body is unknown, in England at least, is, I think, borne out by the fact that the learned professor of comparative anatomy at King’s College, Mr. Owen, and Mr. Yarrell, so well known by his beautiful work on the ichthyology of

Great Britain, were both unacquainted with the circumstance when I mentioned it to them.

"In a number of the American Journal of Science and Arts will be found a somewhat similar account of a muscle discovered in the eye of the streaked bass, by Mr. W. Clay Wallace, Surgeon to the New York Institution for the Blind. This gentleman did me the favour to send me over, about twelve months since, his paper published in that journal. From the circumstance of my not being aware of being personally acquainted with Mr. Wallace, I cannot help suspecting that he is one of the Americans to whom the observations made by me were imparted at the Ophthalmic Hospital some years ago."

To this *suspicion* it is unnecessary to say any thing farther than that I have never seen the gentleman, nor have I ever been in London.

As the diameters of lenses of any other shape than spheres would be altered by drawing them forward from only one point of attachment, there must be some other arrangement for adjustment when the crystalline is not a perfect sphere; and that arrangement is found in the ciliary body, which does not exist in animals with spherical lenses.

When, in the customary manner, we expose the ciliary body of the ox, by removing the anterior half of the sclerotica with the cornea, we bring into view—1, the choroid, 2, the annulus albidus, and 3, the iris; but if we commence the dissection from the centre of the cornea, and make a number of radiated incisions, extending along it and the anterior half of the sclerotica, taking care not to go through the coat of Decemet, the annulus albidus, or the choroid, until about eight or ten of the incisions are completed; if we then cut completely through the cornea, and turn over the flaps, we may, with care, carry with them the annulus albidus, the portion of the choroid which covers the ciliary body, and some muscular fibres. If we now tear off the iris, the circumference of which is loosely connected by cellular membrane, we have a beautiful and instructive preparation. We observe the apices of the ciliary processes surrounding the margin of the crystalline, the attachments of the processes to the

anterior wall of Petit's canal, the grey cellular matter connecting them together, and surrounding this cellular matter two muscles resembling crescents, the horns of which meet at the equator of the eye. The muscular fibres are radiated, their colour resembles that of the legs of a frog, they are most plainly visible in the fresh eye, and in this respect they differ from the so-called muscular fibres of the iris. Each of the ciliary processes resembles a leaf, and is highly vascular. The trunks of the arteries supplying the processes pass the muscular fibres at the junction of the crescents, a spot where they cannot be affected by the contraction of the fibres; whereas the returning veins pass directly under the muscular fibres, and may be so compressed by the contraction of the latter that the processes may become erect from accumulation of blood in the vessels.

When we cut off the cornea, and that portion only of the sclerotica which covers the ciliary body, then the ciliary body and iris, and inflate the canal of Petit, we observe that the crystalline advances, and that when the inflation is discontinued, it resumes its situation. The anterior wall of Petit's canal is merely an extension of the capsule of the crystalline over the hyaloid or investing membrane of the vitreous humour, to which the circumference of the extended capsule becomes attached. The utility of the plaiting will become evident if we make two models of the eye, one with a plaited, and another with a plain anterior wall of this canal; when it will be found that the unplaited model will not work, whereas the crystalline of the other may, from the looseness of the plaits, be made to advance to a considerable extent. The use of Petit's canal appears evident; the anterior wall is permitted to pass freely forward, by there being a canal or space between it and the true hyaloid membrane, and when it advances the crystalline goes along with it.

The membranes of the vitreous humour radiate from the posterior wall of the canal of Petit, and from the posterior capsule of the crystalline, in such a way, that when the latter is drawn forward, they may, by their elasticity, draw it backward. In animals with spherical lenses, some of the

membranes of the lower portion of the vitreous humour, nearly on a line with the single adjuster, pass through a slit in the retina to be attached to the choroid. In other animals, there is no division of the retina, nor indeed any connection between it and the tunica hyaloidea, except a slight attachment at the entrance of the optic nerve.

We have thus the annulus albidus to give a firm attachment to the ciliary body, by connecting it with the sclerótica, the muscular fibres to contract the ciliary veins, the ciliary processes to become erect by the accumulation of blood, the plaited margin of the capsule forming the anterior wall of the canal of Petit to which the processes are attached, the space between this and the hyaloid membrane to allow it to be drawn forward, and the elastic membranes of the vitreous humour, to draw back the crystalline when the opposing force is removed.

The use of the ciliary body is therefore evident, from, 1. its entire absence in animals with spherical lenses where there is another instrument for drawing the crystalline nearer the cornæ; 2. the structure of its different parts; and 3. there is no arrangement by which adjustment can be explained, or by which we can account for the sudden occurrence of near and far-sightedness.

In man, though the muscular fibres are not placed in crescents round the ciliary processes, but in an entire ring, the rest of the arrangement resembles what has been described. A ciliary body always exists whenever the crystalline is not a sphere, as in quadrupeds, birds, and reptiles, where it is a double convex, or plano-convex; the shark, the porpoise, and a species of eel, where it is an oblate spheroid; and in the cuttle-fish, where it is a prolate spheroid.

Though the existence of ciliary muscles has been denied by those who have not had an opportunity of seeing them dissected, the clearness of my demonstrations has been acknowledged by some of the profession. Being concealed by the outer layer of the choroid, they escaped exposure until I discovered the above method of taking it off.

When the eye is adjusted to a remote object, and when by the external muscles we then direct it to one which is near, a confused or indistinct image

of the latter is formed on the retina; the impression is communicated to the sensorium by the optic nerves; a reflex affection of the third and fifth pairs of nerves from which the ciliary nerves proceed, causes a contraction of the muscular fibres which are arranged round the ciliary processes; the veins are compressed, and the apices of the processes which float in the aqueous humour of the posterior chamber become elongated; these, being attached to the posterior wall of the canal of Petit, will of course draw it forward; the advancement of this wall will be followed by advancement of the crystalline until a distinct image of the object is formed on the retina.

[To be continued.]

ON A
PECULIAR AND OBSTINATE FORM
OF DIARRHŒA,

APPARENTLY COMPATIBLE WITH A ROBUST
FRAME, THOUGH OF LONG DURATION.

BY D. MACLACHLAN, M.D.
Royal Hospital, Chelsea.

(For the *London Medical Gazette*)

THE form of diarrhœa to which I allude must be of frequent occurrence, though I am not aware of any monograph on the subject, and no mention is made of it by any of our systematic authors. Three cases have come under my own observation within the last three years, and I am aware of a fourth that recurred after a duration of from four to five years. It therefore merits the attention of the practical physician, and, in a pathological view, is highly interesting.

In all the cases I have met with, there has been such a striking similarity, as to leave no doubt, in my mind, that the causes of the disorder were precisely alike. On first awaking in the morning, the patient is seized with a desire to stool; he is no sooner out of bed than this becomes inevitable, and he has scarcely reached the closet ere he voids from half a pint to a pint of broken-down feces: the relief is decided, but he has not returned to his apartment before the inclination is again equally urgent: he now passes a lesser quantity, and in a more fluid state, and again he is much relieved by

the evacuation. After a number of motions, varying from two to five, the desire altogether ceases, a longer interval occurs between each, and the patient sits down, little debilitated or exhausted, to enjoy a hearty breakfast. If this is one of his "bad mornings," breakfast is hardly over when he has passed another liquid motion, and again he has a renewal of his former symptoms. Seldom, however, has he more than two, or at most three, evacuations after breakfast; and by 12 or 1 o'clock he is perfectly comfortable for the remainder of that day. His appetite is good, and he has no uneasiness in the rectum. A few articles of diet disagree with him, increasing the number of the motions, and producing occasionally flatulency. Malt liquors, beer, ale, or porter, are generally injurious, but a few glasses of wine seem to have no effect on the complaint.

The symptoms go on in this way, probably, for some years. Each morning there is a return of the diarrhœa, but, strange to say, when within bounds, when not above two or three motions are voided from the time of getting out of bed till the forenoon, the general health seems scarcely to suffer. In two of the three cases of this form of diarrhœa coming under my care, the individuals were robust and muscular. One of these had suffered for upwards of two years; he had never during that period passed a formed motion. The other patient had been affected for a much longer time, but had intervals of two or three weeks, during which, though the fæces continued liquid, they had assumed a consistency, and did not exceed one or two daily. The third case was not of above four or five months' duration. This patient was much reduced in flesh; I only saw him twice. He had long been afflicted with rheumatism and chronic dyspepsia. The gentleman in whom the fourth case, above referred to, presented itself, tells me that though worried by the disorder for four or five years, it produced no ill effect on his bodily health.

The pulse is not at all affected; the appetite is, generally speaking, good, and the tongue remains clean; pressure is not productive of pain in any part of the abdomen. I never found any tenderness in the ileo-cæcal region. The evacuations, though liquid, look healthy;

they generally consist of broken down fæces, intermixed with rounlish soft lumps. In neither of the two cases which I examined minutely could I detect any thing abnormal in the rectum. There were no hæmorrhoidal tumors in either, and no increased irritability of the lining membrane. In fact, in none of the cases I have witnessed, was there reason to believe that the rectum was at fault, inasmuch as the motions were in all voided without pain, and without tenesmus. All the individuals were males, of sober habits, and past the middle period of life. Two of my cases recovered; the third I lost sight of. One attributed, and apparently with good reason, his illness to scarlet fever, from which he had scarcely recovered when the bowel complaint made its appearance. In none of the others could it be traced to any particular cause.

I am at a loss to say what part of the intestinal canal is affected, in this form of diarrhœa, or in what the precise nature of the affection consists. As the general health seems to retain its vigour—the assimilative process, it would appear, is unimpaired—we may therefore infer, that the termination of the colon is the seat of the disorder, and this probably consists in a limited patch of inflamed mucous membrane, or in inflammation of one or other of the subjacent textures. I was at first disposed to attribute the symptoms to an irritable state of the rectum; and not until I had satisfied myself by repeated examinations both by the finger and bougie, and watched the effect of local treatment, did I arrive at a contrary opinion.

My experience in the treatment of this form of diarrhœa is but limited. I have, however, seen enough of it to convince me that it is exceedingly untractable. One case, after having been six months under the care of various practitioners, and taken the usual remedies for chronic diarrhœa, was subsequently, for a similar period, under my observation, before any impression appeared to be made on the complaint. At length remedies which had previously failed now proved beneficial, and he gradually recovered. Another case was for upwards of nine months under my care. Almost every thing that gave promise

of a hope was tried in this case, both as regards diet, regimen, baths, and medicine. The means adopted, if at all operative, appeared to be beneficial temporarily. At last the complaint gave way, and was ultimately cured by a tour in Scotland.

The remedies which I had recourse to in these cases were the various mineral astringents recommended in chronic diarrhœa, with larger or smaller quantities of opium, and in various combinations and doses. Not one or any of these appeared to do good; and the disorder was increased on one or two occasions by the sulphate of copper and by the acetate of lead, these substances seemingly adding to the irritability. I have always derived more benefit in this disorder from the vegetable astringents; and a mixture, consisting of the infusion of cascarrilla, the liquor potassæ, and the compound powder of kino, has been most generally useful. Were I to attribute recovery to any one means, I should say in two of the cases it was owing to this mixture. Whenever I succeeded in keeping the individuals on a limited allowance of food, there was generally an obvious improvement, and quantity seemed to have as much effect as quality in restraining the disorder.

I cannot aver whether a vegetable or animal diet is best suited to these cases. From what I have observed, however, I should rather lean to the former; but, as regards diet, the smaller the quantity taken, the less troublesome will the complaint be found.

I may remark that, in the case of recovery, after being afflicted for four or five years, the individual at length recovered by restricting himself solely to a vegetable diet, consisting principally, he informs me, of greens and cabbage. This gentleman had been a patient of almost every physician of reputation in London, without deriving permanent benefit from the means employed, when, tired of medicine, "finding that he *must have* three or four motions before breakfast," he discontinued taking any, and speedily recovered under the system which he had himself adopted.

I have thrown out these few observations on this obstinate form of diarrhœa, more with a view to inquiry than the expectation of elucidating the

subject; and if I succeed in bringing it to the notice of any one of experience, I shall have gained a main object in communicating them to the public.

Dec. 7, 1842.

MEDICAL GAZETTE.

Friday, December 16, 1842.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicee* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

THE LATE REPORTS ON PRISONS.

It is obvious that imprisonment may be conducted on two opposite systems. In the one, the object is to inflict the utmost possible pain, and inspire the utmost possible terror; in the other, it is thought right that the punishment should bear some proportion to the offence, while the reformation of the criminal also enters as an element into the calculation. The first or old system was very simple, and as long as justice and humanity slumbered, was singularly easy of execution. Put a prisoner into a cell, chain him for security, flog him if he makes a noise, give him a minimum of food, and no materials for washing, and the problem is solved. But, it will be answered, this is an exaggerated and impossible series of suppositions. Not very exaggerated, it may be affirmed, if we recede from the present scene to some distance in time or space.

Esquirol speaks of towns in France, where, in *his own time*, prisoners and lunatics alike had but a three-pound loaf and a jug of water, every other day, for their subsistence*.

But if we go back to the reign of Queen Elizabeth, and look with the eyes of history on the cells of "little ease," in which she immured some of her state-prisoners, the description we

* Sur les Maladies Mentales, vol. ii. p. 410.

gave above will appear all too favourable. Her cells, if we recollect aright, were below the level of the Thames, were infested by rats, and did not allow of the prisoner's lying-down. No humanity-mongers had troubled the eternal peace of those quiet dungeons! Those were the days of "rotting in jail," as our ancestors termed it. If a prisoner escaped with his life from those dank and dreary receptacles, if his gaunt form and matted locks were seen in the broad daylight, and he could shew his fellow-citizens his back marked with stripes, and his joints stretched by the rack,—surely this would produce the most hushed and passive obedience among his affrighted comrades? By no means. When punishment is utterly out of proportion to crime, indignation overpowers terror, and a state of opinion is excited, which every wise legislator would deprecate, a state where sympathy is not with the law, but the offender. If punishment is over rigorous, its continuance calls forth the pity of the just, and they are ready to say of the criminal,

Il est assez puni par le sort rigoureux
Et c'est d'être innocent, que d'être malheureux!

When our statute-book emulated the code of Draco, and two hundred offences were capital, juries used to value a gold watch at 39 shillings. The ease, however, with which the old system was executed, by no means became the inheritance of the new. The plan of graduated punishment and attempted reform is evidently a just medium most difficult to hit,—a system of compromises very difficult to defend. If the diet, for instance, of a prison is too low, scurvy and diarrhoea are the result; add some meat and greens to the dietary, and many will exclaim that criminals in the House of Correction live better than the ploughmen without. Opinions on the subject of whipping vary most strangely, as we showed in

our last article, in different parts of England. Solitary confinement, the other great resource in the government of a prison, if pushed beyond the proper limit, induces madness or suicide; and who has ascertained the "proper limit," who has fathomed the hallucination, which are the precursors of madness, or gauged the depths of human endurance?

Nay, even a subject apparently so plain as the education of the inmates of a jail, is not without its difficulties and dangers. It has been objected that a prison is made too agreeable by turning it into a school; and it is feared that some persons will commit petty offences, with the hope of receiving a gratuitous education, and having their reading made easy*.

Another difficulty has sprung up, which we should not have expected to exist to so great an extent as it does. Not only the well-known intentions, but the plainest enactments of the legislature, are constantly and unblushingly violated by the visiting justices, whose office it should be to execute the minutest injunctions of the law. The instances of this dereliction of duty are lamentably frequent in the Reports before us. In a very singular example occurring at Canterbury, the blame must be at least shared by the Town Council.

The visiting justices recommended to the Town Council the appointment of a clergyman of the Church of England as chaplain to the City Jail, with a salary of fifty pounds a-year. "A

* A new method of making reading easy has been discovered, as we learn from Mr. Hill in his Report on the Prisons of Scotland. "Instead of a wearisome expenditure of time in alphabets and unmeaning combinations of letters and words, the most intelligent teachers in the prisons commence at once by teaching the prisoner to decipher a simple phrase of a simple and interesting story, by telling him the words one after another, as if they were so many pictures, and going over the ground again and again until his [their] pupil is thoroughly master of what has been put before him." Is this novelty an improvement? We know not; *judicent peritiores*, as the critics say.

moderate stipend, indeed," the reader will say. Not so the Town Council. They fancied twenty-five pounds to be the fitting sum, but no one would take the place. Mr. Walker, however, the minister of a Unitarian congregation in Canterbury, attends the prison gratuitously. He goes through the service of the Church of England, omitting those parts which he cannot conscientiously read; preaches sermons, in which he avoids everything relating to his own peculiar tenets; and teaches the prisoners to read and write. The inspectors, while acknowledging the merits of Mr. Walker, point out to the magistrates the extreme illegality of their economic plan. Four different enactments of two modern statutes are violated by the appointment of a dissenting minister to the chaplaincy of a prison.

If the Town Council are inaccessible to reason, surely there must be some legal method of forcing them into decency. Would not the Court of Queen's Bench grant a mandamus to compel them to offer a proper salary?

That the keeper of a jail should live in the prison which he professes to keep, seems a self-evident truth—too plain to need the sanction of an Act of Parliament. Yet, strangely enough, it is so stated in the law; and, still more strange to say, the enactment is violated in several English jails.

What is to be done with juvenile offenders, with young thieves, say under 18 years of age? A question of much importance, and most difficult of solution. It is allowed on all hands that the commitment of young delinquents to jails, where they associate with hardened criminals, is in the highest degree cruel and inexpedient. Society loses more by this contamination of the young, than it gains by their chastisement. Either our prisons must afford the means of isolation for the young, or there must be separate asylums for their use.

"It was with pain," say the inspectors, when speaking of the Ilford House of Correction, "we found several boys in the prison, three of whom were committed for absconding from the union workhouse. They were in a yard in which were prisoners convicted of theft. The close contact in which they were placed with worse characters than themselves could not fail to be mischievous, and the workhouse or vagrant boy would thus readily become converted into a thief. We strongly doubt the policy of sending to a jail juvenile offenders for breaches of workhouse discipline*."

We cannot, however, agree with those who, to avoid the contamination to which untried prisoners are exposed, would deprive juvenile offenders of the benefit of trial by jury, and make summary conviction the almost universal rule in their case. Let jail deliveries be more frequent, but do not give up a large portion of the population to the caprice of county justices.

As for tiny transgressors, aged 8, or 9, or 10, we think the old domestic remedy of spanking the glutæi more appropriate than incarceration in the most exemplary penitentiaries. In the borough of Kingston-upon-Hull, however, a very different theory prevailed, and *unconvicted* children were habitually sent to jail, with the consent of their parents, to expiate their offences. The following is one of the *lettres-de-cachet* used in this borough:—

"To the Governors of the Gaol at the Borough of Kingston-upon-Hull—

"Receive A. A., and keep him in solitary confinement for 14 days; this is done with the consent of his parents. This boy is to be well flogged before his discharge, twice.

*"Dated the 29th day of September, 1841.
"B. W. Sellon†."*

This culprit, as early in years as in initials, was of the age of ten!

The list of the young people com-

* Sixth Report. Home District.

† Seventh Report. Yorkshire, East Riding.

mitted in this way to Kingston-upon-Hull jail by justice-made law, in 1840 and 1841, amounts to fifty-seven; of whom three are aged 9; seven are aged 10; seven, 11; and only one is so old as 17. One child, aged 11, is to be kept in confinement one calendar month, the last week solitary. This monstrous abuse of authority was not always committed with the consent of the parents; for in one instance we find "no consent specified;" in another (a child of 12), "*done with the consent of the relieving officer of the parish of Sculcoates.*"

Captain Williams, the Inspector, having previously recommended, but in vain, the disuse of this "extraordinary treatment of children," made a special report on the matter to Sir James Graham, who ordered the practice to be discontinued.

The justices of Kingston-upon-Hull have hitherto been deaf to law, common sense, and the admonition of the inspector; the next Report will inform us whether they have listened to a Secretary of State. But though Kingston-upon-Hull appears to stand alone in the punishment of unconvicted children, convicted offenders of very tender years are common enough in other places. Thus, in the same Report, we find an account of the House of Correction at Cockermonth, where two prisoners were sentenced, in 1841, to pass twenty-four hours, for damaging a quantity of stones; one of the transgressors was aged 7, the other 9! In the same jail, too, was a child of 12, committed for seven days, for being disorderly in the workhouse.

In his account of the House of Correction at Nottingham, Capt. Williams says, "I am very doubtful as to the treadwheel being either a proper or a salutary punishment for children. *I observed two boys, each 10 years of age, on the wheel at the time of my visit.*"

Instances of precocious imprisonment abound in the Sixth Report. Thus, at Abingdon, in the County House of Correction, we find a child of 13 condemned to a month's imprisonment with hard labour, for stealing potatoes; and one of 14 for three months, with hard labour, for running away from the workhouse; a fault, we should say,

Ignoscenda quidem, scirent si ignoscere
Manes!

In the same place, among the list of those punished for breaches of prison discipline, we find a convicted child of 13 sentenced to a day's solitary confinement for talking, and an unconvicted one of 14 to three days' solitary confinement for whistling and singing: while two offenders of 12 and 14 are condemned to live for three days on bread and water, the former for being disorderly in his cell, the latter for the same defect in school.

In the Aylesbury County Jail we read of a youthful malefactor of 12, sentenced to a month's hard labour for damaging a pair of spectacles; while one of 15 has thrice his punishment, and another of 15 has four times as much; the former for stealing apricots, the latter for damaging fir-trees. In the same prison is a child of 13, sentenced to seven years [transportation] for stealing money.

In the St. Alban's Liberty Jail and House of Correction we find a prisoner aged 13 confined for two months, with labour, for stealing apples; and in the County Jail at Canterbury, a child of 11 sentenced to ten years' transportation, for breaking into, and stealing in, a dwelling-house. Among the prison offences punished in the same place, we find one of neglecting his work, and talking, ascribed to a delinquent aged 9, the penalty being "two days' dark cell." Two prisoners, aged 15, expiate the error of talking or being disorderly

on the wheel, by seclusion in the dark cells.

In the City Jail of the same town the attempted escape of E. P., aged 12, is avenged by twenty-four hours' solitary confinement.

In the list of punishments for breaches of discipline in the Dover Borough Jail, so many of the culprits are 12, 13, 14, or 15 years of age, that one might imagine the prison to be a kind of austere nursery. Nay, J. C., æt. ten, appears thrice in the list, once for indecent language, once for neglecting his work, and once for neglecting his lesson, the chastisement in each case being solitary confinement.

In the Clerkenwell New Prison we find several children aged 9.

Would not the domestic remedy which we extolled above be applicable in many of these cases? However this may be, we must repeat that a classification of prisoners is one of the most crying wants of the age. In the Springfield County Jail for Essex, the inspectors found a man convicted of bestiality in the same yard with prisoners guilty of trifling thefts, damaging grass, and furious driving!

Let us hope that the servant-girl committed to Northleach Jail, a short time since, for modesty, has not been compelled to herd with prisoners reproachable with a contrary defect.

FELLOWES' CLINICAL PRIZE REPORTS.

By ALFRED J. TAPSON.

University College Hospital. 1842.

CASE I.—*Acute pneumonia, affecting the lower lobe of the left lung chiefly, extending a little into the right lung, with fever, pain, dyspnoea, cough, rusty expectoration, dullness on percussion, bronchial respiration, crepitation, bronchophony, diminished vocal fremitus, &c.; complicated with incipient phthisis. Treated by cupping and tartar emetic, &c.*

Edwin Brown, æt. 17, admitted into University College Hospital, under Dr. Taylor, June 21st, 1842.

A youth of rather slender conformation, fair complexion, and nervous temperament; an errand-boy, exposed to all kinds of weather: has always had enough to eat; says his habits are temperate. Lives at Eagle Street, Holborn, in a dry but confined situation. Parents both living; mother troubled occasionally with catarrh, and father generally has a cough in the winter, and frequently has rheumatism: has six brothers and sisters; one of the latter has usually a cough; the rest are healthy.

Previous history.—He has never been laid up with a severe illness, but his health is habitually delicate; takes cold very easily; his breathing is generally short, and he is subject to palpitation. About three years since he spat a small quantity of blood, with coughing, and has had more or less cough ever since, especially in the morning, and it has been increased for some months past; has been losing flesh during the last two or three months, and for a month past has sweated considerably at night. He had gonorrhoea and chancres a year ago, and was cured by taking mercury. The present attack commenced on June 18th; on the 17th, he had been engaged in chopping wood in a draught between two doors, and was heated a good deal with his work; he was not exposed to wet. The attack came on pretty suddenly, with an aching pain in the left side, which prevented him from breathing freely, the pain being rendered very sharp when he took a full breath; it was not preceded by shivering, or other symptoms of fever, except about a fortnight before the attack, when he had a cold; he also had pain in the head, back, and limbs; great heat of skin, thirst, anorexia, weakness, with shortness of breathing; a dry, hacking cough, accompanied with difficult expectoration of a white, very "sticky" matter. In the afternoon this became yellowish, and the next day brownish; he vomited a considerable quantity of a bitter yellowish matter on the evening after the attack commenced, and the vomiting has returned after eating or drinking till to-day. The bowels have not been opened since the attack till this morning; the urine has been scanty, but not high coloured.

[We this week present our readers with the first of a series of reports of medical cases reported and commented upon by Mr. Alfred J. Tapson, and which form a part of the exercises for which the Fellowes' Clinical Gold Medal was awarded at University College Hospital at the termination of the summer session of 1842. The reports will be slightly abbreviated, &c., to render them more adapted for general circulation.]

At present, the surface feels very hot and dry; the temperature in the axilla is rather above 106° Fah.; the countenance is strikingly dull and heavy, and of a dusky colour; the senses seem to be blunted; he is rather deaf, and seems very weak; he lies chiefly on the left side, because he feels easiest in that position. The breathing is short and very quick, and almost wholly costal; the respirations 48 in a minute: he has a hard, frequent cough, with rusty-coloured, very viscid expectoration, so that the vessel containing it may be inverted without its running out. The cough is not quite so bad as it has been, and the expectoration is rather more free: he complains of a severe pain in the left side, just below the lower angle of the scapula, and there is some tenderness on firm or even slight pressure here; the pulse is 128, jerking, moderately full, not hard; the tongue is very dry, and is covered with a coarse, brownish fur; he is very thirsty, and has no appetite.

Physical signs.—Posteriorly, there is perfect dulness on percussion over the lower two-thirds of the left lung, as compared with the right, where the sound is clear, except in the region of the liver. In the same parts as the dulness on the left side there is well-marked bronchial respiration, and strong bronchophony; and at the lower angle of the left scapula the voice has a somewhat nasal twang, not amounting to ægophony. At the end of inspiration, crepitation is heard in the same situation; on the right side, there is bronchial respiration at the base of the scapula, and a slight muco-crepitant rhonchus; the vocal fremitus is felt much more distinctly on the right than on the left side. Anteriorly, there is no dulness on percussion; the respiratory murmur is rather feeble in the lower part of the left side, and rather puerile in the upper part; it is more puerile all over the right side; the vocal fremitus is more marked on the right than on the left side. The heart's sounds and impulse are rather feeble; no morbid sound.

Cucurb. Cruent. lateri sinistro, ad. f3x.

℞ Calomelanos, gr. v.; Miceæ panis, q. s. fiat pilula statim sumenda et post horas quatuor Haust. Sennæ Comp.

℞ Antim. Potassio. Tart. gr. j.; Misturæ Camphoræ. f3iss.; ft. Haustus, sextiss horis sumend. Low Diet.

Three hours after the cupping he felt much easier; the skin was cooler; and the respirations only 36 in a minute. The blood contained more coagulum and less serum than usual.

June 22d.—Countenance much less heavy; face not flushed; has slept nearly all the night; skin much cooler (the temperature in the axilla being 98° Fah.) and perspiring freely; the breathing much slower, and

rather less costal; no apparent difference between the two sides; respirations only 28 in a minute; cough diminished; expectoration more free and less viscid, not uniformly rusty, and is more yellow, like orange marmalade, than the reddish brown of pneumonia in general; pain much easier; tongue moister, red at the apex, and furred in the centre; no crepitation heard to-day; pulse 88, soft and compressible, scarcely jerking. The bowels have been opened freely three times: the urine is very scanty, only half a pint having been passed since his admission: its reaction is very acid; sp. gr. 1026; it is turbid, with a yellow sandy matter in it, which is dissolved by heat or nitric acid.

Sumat. Haust. Antimonial, omni 4tâ. horâ.

24th.—Did not sleep so well; perspired less; had more pain in the left side, and also in the back, and more cough; is rather hoarse, and his head feels rather stuffed, as if he had taken cold; surface of the natural temperature; respirations 24 in a minute; pulse 80, smaller and soft; expectoration about the same in quantity, but of a more mixed character, partly rusty, partly streaked red with blood, partly frothy, and contains some little opaque yellow masses floating in it: it is much less viscid: thirst less; the tongue feels sore, only slightly furred along the middle; urine increased in quantity, tolerably clear.

Physical signs.—Posteriorly, on the left side, percussion is still dull in the lower part, and in the middle third the respiration is strongly bronchial; below, there is more vesicular murmur heard, and a muco-crepitant rhonchus, with the inspiration, and bronchophony; on the right side the percussion is rather dull in the middle third; the bronchial respiration is more marked, and there is a rather acute muco-crepitant rhonchus. The vocal vibration is more nearly equal on the two sides, but still is most distinctly felt on the right side.

25th.—Better in most respects; but the tongue is much more sore, and is very dry, and chapped along the middle; the abdomen feels tense and rather enlarged; the bowels have not been opened since the 23d, and he has made no water since yesterday morning.

Repet. Pilula Calomel. et Haust. Purgans.

Soon after this, the bowels were freely opened, and he passed plenty of water.

27th.—Is much better altogether: still has a little pain and soreness on the left side when he coughs, or draws a deep breath; the cough and expectoration are both getting less; the expectoration consists chiefly of clear mucus; the respirations are 23 in a minute; the pulse 80, soft, compressible, and regular. The dulness, on percussion, on the left side is much diminished, and the

pulmonary resonance increased; the respiration is still rather bronchial in the middle third, and feeble in the lower third; no crepitation anywhere; and only a coarse mucous or muco-crepitant rhonchus with the cough.

Sumat. Antim. Potassio Tart. gr. $\frac{1}{2}$,
tantum pro dosi.

July 1st.—Still has a slight pain on coughing; the cough and expectoration much the same as at last report; tongue still rather sore and red; appetite returning; percussion still rather dull in the lower part of the left side, and slightly so on the right also; and the respiration partakes of a bronchial character in both, but is mixed with more vesicular murmur; a coarse muco-crepitant rhonchus is heard when he coughs; urine increased in quantity, of a lighter colour, and sp. gr. 1011.

Omit. Haust. Antimonial. Ordered a pint of milk in addition to low diet.

July 2d.—Improving; muco-crepitant rhonchus heard nearly all over the left side behind.

℞ Potassii Iodidi, gr. iij. Mist. Camphoræ,
℥iiss. ter die sumendus.

July 4th.—Breath still short; cough and expectoration less; the expectoration is chiefly mucous, with a few flakes of opaque matter floating in it.

Augê Potassii Iodidi ad gr. v. pro dosi.

July 6th.—Very much better in every respect; feels stronger; has scarcely any pain left; appetite good; tongue clean; bowels regular; urine free, clear and natural. Vesicular murmur increased on the left side, and not much bronchial respiration on either side.

Ordered middle diet, and two pints of milk daily.

July 9th.—He does not gain strength so rapidly as, from the improvement in the disease, he should do: this led to a more particular examination of the upper part of the chest, to see if there was anything there which would explain it; we found that percussion was not clear in either of the supra-scapular fossæ, and of the two the right was rather the duller: under the clavicles the sound was not near so clear as it ought to have been, from the thinness of the walls of the chest, and here too the dullness was most marked on the right side; the respiratory murmur was "rude" under both clavicles, and under the right the expiration was prolonged; the vocal fremitus was considerably greater on the right side than on the left. Both moved equally in inspiration.

July 11th.—Is tolerably well, but feels weak; has no pain left; the cough is considerable, and the expectoration very little

and consists of clear mucus; there is scarcely any difference in percussion on the two sides below and behind; no bronchial respiration in either; the vesicular murmur is still a little feebler on the left than on the right side.

Discharged cured.

REMARKS.—The diagnosis of the disease was exceedingly clear. 1st. from his appearance: the countenance had that peculiar heavy and dull, yet anxious expression, and purplish flush, which characterise pneumonia. 2d. from the mode of attack, which was in almost every respect that of pneumonia, viz. a sudden attack of pain in the side, causing dyspnoea; depression, head-ache, pain in the back, and when reaction commenced, a hot and dry skin; thirst; cough and viscid expectoration; anorexia and vomiting. One symptom which is generally present was absent, viz. the premonitory attack of feverishness; a shivering fit followed by heat, before the recurrence of any local symptoms. Chomel attaches great importance to this symptom, especially in persons advanced in life, believing that it not only generally precedes pneumonia, but also that the occurrence of a severe rigor almost always indicates the approach of pneumonia. 3d. from the symptoms and signs which existed on his admission to the hospital, which was on the 4th day of the attack. Of the general symptoms the following were the more important. (1.) the countenance, already noticed, with which may be classed the dullness of the senses and the position on the affected side. (2.) the great heat, and the dryness of the skin. (3.) the short and quick respiration. (4.) the quick and jerking pulse. (5.) the severe pain in the side, and tenderness on pressure. (6.) the hard and frequent cough, and viscid rusty coloured expectoration.

Of the physical signs the following were the chief. (1.) the costal respiration. (2.) the dullness on percussion in the lower two-thirds of the left lung posteriorly. (3.) the well-marked bronchial respiration and bronchophony heard in the same situation. (4.) the crepitation at the end of the inspiration. (5.) the diminished vocal fremitus on the diseased side.

With all these there could be no doubt as to the nature of the disease: indeed, the crepitation and rusty coloured viscid expectoration, by themselves are pathognomonic of pneumonia, and when to these we add the general fever and signs of consolidation, not the slightest doubt could remain.

We shall now make a few remarks on some of the symptoms and signs. And first with respect to the heat of the skin. In the limited number of cases in which we have actually measured the temperature, it appears to be uniformly high in the active stage of pneumonia: in this case it was 106° F., and in two others

104°. Secondly, as to the frequency of respirations. This also appears to be much increased; in this case it was 48 in a minute; in another which will be reported, it was 54, in a third 44, and in a fourth 36. This sign alone is not of much diagnostic value, as we have counted 72 respirations in a minute, in a case of hysteria: thirdly, the pulse has been very rapid in several cases; in this it was 128, in another 148, and in two others 120. Now these three symptoms appear to be very closely connected in pneumonia, for in all the cases, where we have particularly marked them, the decline has been proportional in each: thus, in the present case, on the first day the pulse was 128, the temperature of the skin 106° Fahr., and the respirations 48 in a minute; on the second day the pulse was 88, the temperature 98° Fahr., and the respirations 22—all reduced nearly to the natural standard except the respirations, which were habitually frequent in him: in another case, on the first day the pulse was 148, the respirations 54, and the temperature 104°; on the second day the pulse was 120, the respirations 36; on the third day the pulse was 112, and the respiration 32; and on the sixth day both were about the natural standard, viz. the pulse 80, and the respirations 20 in a minute, and the temperature was 99° Fahr. We can easily understand this intimate connection between them, when we consider the very close connection that subsists between the functions of circulation, respiration, and the production of animal heat. Fourthly; as to the position of the patient in pneumonia, there seems to be no constant rule: taking all the cases together, perhaps he as frequently lies on the back as on either side: if the attack be mild he often lies on the non-affected side, but if it be severe, and limited chiefly to one side, he almost always lies on the affected side, as here, both to prevent motion on that side, which would increase the pain, and also to permit free motion on the healthy side, so that it may perform the supplementary respiration as completely as possible. Fifthly; as to the vocal fremitus. This, we have seen, was modified by both the diseases which existed being increased by the tubercles and diminished by the pneumonia. The vocal fremitus depends on the vibrations which are produced in the vocal chords being propagated along the columns of air contained in the trachea and bronchial tubes, and transmitted from the smaller bronchi and air cells through the substance of the lungs and parietes of the chest, so as to be felt by the hand, when applied to the exterior of the chest. Like the voice itself, these become diminished as they pass from the place where they are produced, either into the external air, or into the air contained with-

in the lungs, and consequently they are felt most distinctly over the large bronchi; as may be proved by placing the hand over the upper part of the sternum, and then over the lower parts of the chest, during the act of speaking: they will be felt much the most distinctly in the former situation: this will shew the necessity of always comparing corresponding parts of the chest in this as well as in other physical signs. Such being the mode of production and natural variations in the vocal fremitus, we have to consider how it is modified by disease, and any explanation that may be offered must obviously be based on the physical conditions of the lungs, as its whole production is a physical phenomenon.

It is clear that since the vocal fremitus depends on the vibration of the air, anything that excludes the air from the lungs will prevent the vocal fremitus. We saw one case in the hospital, where the large bronchus leading to the right lung was very much pressed upon, and the texture of the lung itself condensed by carcinomatous depositions, and in this there was a complete absence of the vocal fremitus.

The vocal fremitus has by some writers been stated to be increased, and by others to be diminished, by condensation of the texture of the lung; and this case seems to shew that both statements may be correct; for in the upper part of the right lung there were the other signs of condensation, and from the general symptoms this condensation was due to the presence of tubercles; also, in several other well-marked cases of incipient phthisis, in the hospital, under Dr. Taylor, the vocal vibration has been found to be distinctly increased on the side most affected; and in the lower part of the left lung it was much diminished, as we have also seen in other cases. Now both tubercles and pneumonia cause consolidation of the tissue of the lungs, and unless there be anything in the physical nature of the consolidating material, or in its mode of deposition, to cause a difference, both should increase or both diminish the vocal fremitus; and such, we have seen, is not the case: is there any difference in the material, and what is the difference, if any? In tubercles the material is dense and hard, and is deposited in the tissue, rendering it harder and more capable of vibrating, and at the same time it does not block up the small bronchial tubes, so that the air still comes pretty close to the surface of the lung. Combining the last fact with the increased capability of vibration in the tissue itself, we can explain the absolute increase in the vocal fremitus in the early stage of tubercles. On the other hand, in pneumonia the consolidating material is soft lymph, devoid of elasticity, and this is deposited in the tissue and also in the air cells and smaller bronchial

tubes, thus more or less completely excluding the air from the diseased part of the lung; so that the vibrations, in order to reach the surface of the chest, have to be conducted through a much greater mass of tissue than in health, and therefore, unless the tissue becomes correspondingly more capable of transmitting the vibrations, the vocal fremitus must be diminished. That there is no such increased vibratile capability must be evident when we consider the soft inelastic character of the lymph; for vibrations cannot well take place without a certain amount of tension and elasticity; and we think that the fact of the air being prevented from coming so near to the surface of the chest, as it does in health, and the nature of the consolidating material, taken together, are quite sufficient to account for the absolute diminution of the vocal fremitus in hepatization, as well as the relative difference between this and the consolidation of incipient phthisis.

But it appears that, in some cases of pneumonia, the vocal fremitus is increased rather than diminished: how can we reconcile these facts? It may be, perhaps, that in the cases where this has been noticed, the inflammation was seated in a part where there are a number of tolerably large bronchial tubes near the surface of the lung, such as would not be blocked up in pneumonia, and the lymph itself has been more highly vitalized and firmer; and then the consolidation of the air-cells and very fine tubes may rather favour than impede the transmission of the vibrations: or it may have been examined at an earlier stage of the inflammation, before the hepatization was complete, and when, therefore, the tubes were less obstructed, and when, also, as is well known, the lymph effused is more plastic, and possesses a greater amount of cohesion.

Having thus proved the disease to be pneumonia, what were the *indications for treatment*? This we shall consider in connection with the results of the treatment adopted. As in almost all acute inflammations, so here, blood-letting was to be regarded as the primary step to be taken; and perhaps in no disease is the advantage of blood-letting so immediate and so great (when practised early) as in pneumonia. Blood-letting being indicated, the next point to be determined was, whether it should be performed generally or locally, or both, and to what extent? The patient was young, and of a weakly appearance, and the disease had already existed four days, and was on the point of passing into the second stage; it was not therefore to be cut short by a full blood-letting: accordingly it was considered that local blood-letting by cupping to ten

ounces would be sufficient. This was immediately done, and the good effects were almost instantly apparent: the pain was relieved directly, and in three hours the respirations were reduced from 48 to 36 in a minute; the skin was much cooler, and the pulse reduced in frequency and force. These are symptoms much to be depended on in ascertaining the decline of this disease. As the bowels were confined, the next thing to be done was to clear these out: this was done by a dose of calomel and a black draught; and he was ordered tartar emetic, in grain doses, every six hours at first, and then every four hours. This is the medicine commonly used in inflammation of the parenchyma and mucous membrane of the lungs, and in both its operation is highly satisfactory: how it acts we do not pretend to say. The next day the general aspect of the patient was much improved: he had slept well; the skin was of the natural temperature, and instead of being harsh and dry, was covered with perspiration; the pulse was only 88, and soft; the breathing had been reduced, in eighteen hours, from 48 to 28 respirations in a minute. The physical signs were also closely examined, and were found to be somewhat altered; that is to say, there was no crepitation; so that the disease had now completely passed into the second stage, or that of hepatization, the signs of which were well marked. In other respects they were much the same as on the first day, and have therefore been omitted, in order to render the account as short as possible consistently with a statement of all the facts. The expectoration was now more free, less viscid, and of a paler brown or marmalade colour, and more frothy; gradually the rusty tint passed off, and the blood became less intimately mixed with the expectoration; so that it appeared in streaks, and then ceased altogether, and the expectoration became almost simple mucus, with a few opaque masses. In accordance with the usual law, that when the respiration is prevented in one part of a lung, or in the whole of one lung, the other parts have an increased duty to perform, we found that, in front, in the upper part of the diseased side, the respiration was puerile, and on the healthy side it was puerile all over.

The inflammation, which at first was almost limited to the left side, gradually extended into the middle lobe of the right lung, and on the 24th, in this part, there was dulness on percussion, well-marked bronchial respiration, and a pretty acute muco-crepitant rhonchus, and the vocal fremitus, though still more distinct on the right side, was more nearly equal in the two. There was a double cause for this; for the disease was diminishing on the left side, as indicated

by there being some vesicular murmur heard and muco-crepitant rhonchus, and it was increasing on the right side. Thus the disease was now double pneumonia: and this is the way in which double pneumonia almost always arises, viz. by extension from one lung to the other, except in those cases where it arises from congestion converted into inflammation by the occurrence of reaction, as in typhoid pneumonia, and in old subjects, in whom it is generally fatal. With this extension of the disease there was a slight increase of the general symptoms: the rest was disturbed, the skin was drier, and the cough more troublesome, &c. But this secondary inflammation was of short duration, and disappeared before that on the left side; so that it did not materially affect the interests of the patient.

He continued gradually to improve, and the dose of tartar emetic was diminished, and then left off altogether, the diet improved, and iodide of potassium given, with the view of removing the remains of the inflammation and promoting the absorption of the effused lymph; and on the 11th of July he was discharged cured.

The *duration of the disease*, reckoning from the time of his admission to the time of his discharge, was twenty days; or reckoning from the time of the attack to the time at which he was allowed better diet, it was nineteen days. The duration was probably increased by the tubercles, which, we believe, existed in the lungs, and which always operate strongly in retarding the recovery from pneumonia. Had the patient's health been good previously, he would have shown more elasticity, and regained his strength more rapidly.

Were there any *complications*? The most common are pleurisy and bronchitis; the former is stated by the French to be a constant accompaniment of pneumonia, and no doubt is very frequently. In this case there was no decisive evidence of its existence at any period of the disease; the slightly nasal twang which the voice had at one spot cannot alone be taken as sufficient evidence. There was probably bronchitis, but not enough to interfere with the progress of the pneumonia. Regarding the tubercles as a complication, we shall here notice the evidence of their existence. First, it is probable that he was predisposed to phthisis; his father and mother both being liable to affections of the chest, and one of his sisters usually having a cough. Secondly, his health was habitually delicate, he easily taking cold, and then having a cough; his breath generally short; he spat blood three years since with a cough, and the cough has been troublesome during the last winter; he has been losing flesh for the last two or three years,

and for a month has had night sweats. Here we have most of the general symptoms of phthisis enumerated, and his appearance confirmed the suspicion of its existence. Thirdly, there were the physical signs of condensation of the upper portion of the lungs, as stated in the report of July 9th. Combining the above, we can have but little doubt of the existence of tubercles.

There were no very important changes in the urine. It was scanty at first, and on the fifth day of the disease deposited a sand-like sediment, consisting of the lithates: this deposit commonly occurs in pneumonia about this time. Subsequently it increased in quantity, especially after the administration of the iodide of potassium.

The *causes* of the pneumonia were probably—1, the predisposition to pulmonary affections; 2, the cold which he had a fortnight before the attack; and 3, the actual exciting cause was the working in such a current of air as he did the day preceding the attack. This exposure to cold for some time, when heated, is the most common cause of pneumonia.

The *prognosis* of pneumonia is generally favourable when it occurs in youthful subjects; but of course it will vary with the extent of the lungs affected, and also with the part of the lung: thus, pneumonia of both lungs is less favourable than when one lung only is affected; and that of the upper lobes is more fatal than that of the lower lobes—said by Louis to depend on the fact of the former occurring more frequently in old people. Here it affected the lower lobe chiefly of the left side, and afterwards a portion of the middle lobe of the right lung. The attack was tolerably severe, but still the prognosis was favourable as to the result, from the age of the patient; and we have seen that he went out cured, or at least in that state in which the lung would probably soon return to the condition it was in before the attack.

Respecting the phthisis, the prognosis is now much less favourable than it was before the attack of pneumonia; for, of all the causes which accelerate the progress of phthisis, pneumonia is the most powerful. We cannot therefore but fear, that this disease, although apparently leaving him in the same state that it found him in, has exercised a highly deleterious influence on the duration of his life.

[We beg to acknowledge that, in this case, as also in those which are to follow, we have freely availed ourselves of the reports, and also of the remarks in the clinical lectures of the physicians under whom the cases respectively occurred.]

DEVELOPMENT OF BONE.

From a Report of the Paris Academy of Sciences, Nov. 7, 1842.

M. FLOURENS read a paper on the Development of Bone. "I have hitherto," says he, "considered the internal periosteum only as the organ of the re-absorption of the bones. This periosteum, however, is also the organ of formation. I now place under the eyes of the Academy a series of pieces of bone, showing the successive formation of new bone in the interior of the old bone. In all these specimens the internal periosteum has been destroyed; in some cases in the whole extent of the bone, in others at a single point only. When the external periosteum has been destroyed in the whole extent of the bone, a new bone is formed in the whole of the interior of the medullary canal; and when the external periosteum has been destroyed at only one point, new bone is formed only at the corresponding point of the interior of the medullary canal. Two powers, therefore, concur in the formation of bone—the power of the external periosteum, and that of the internal periosteum. In the normal state the action of each keeps within its own limits: the external periosteum produces or repairs incessantly the external bone. In the ordinary state, therefore, there is a counterpoise of these powers. But if the internal periosteum be destroyed, the power of the external periosteum being alone in its action, is augmented, and produces an entirely new bone outside the old bone; and if, on the contrary, the external periosteum be destroyed, then the power of the internal periosteum being increased, and alone in its action, an entire new bone is immediately produced in the interior of the bone. The experiments which have already been communicated to you have shown that bones increase in size by successive layers interposed upon each other. The experiments which I am about to relate on this point are still more decisive. Duhamel bound round the tibia of a young pigeon some silver wire; at the end of some time the silver ring was covered with bone, and was within the medullary canal. My experiments were in imitation of those of Dubamel. I bound some platina wire round various long bones of several animals—dogs, rabbits, guinea-pigs, &c. The result was as follows:—The new bone, which did not exist when the platina ring was put on, grew over it; thus showing that bone is formed by external layers."

The specimens exhibited by M. Flourens prove that there was neither extension, nor rupture, nor rejunction of the osseous fibres on the level of the ring; but M. Flourens

being desirous of showing this more completely, adds, "At the same time that I placed this wire on a long bone of an animal I amputated the corresponding bone of the opposite side, and preserved it, as it was to serve as a point of comparison. The animal was then left to itself, and, at the end of a certain time, was killed. The result of these experiments confirmed my former conclusions, and proved that the bone does not distend, that it does not give way, and that the new bone is formed over the old bone. The experiment was performed on the tibia of a guinea-pig. The animal was fed for twelve days on the plant from which is obtained the dye called *garance* (madder). The animal being then killed, and the bone dissected, all the new bone was found to be red, and the old bone white. All the new bone was above the ring, and all the old bone was under it. The old bone was of the same diameter as that of the opposite side, which was amputated on the day when the wire was bound round the other bone. When two perforations are made in the bone of an animal, and it is allowed to exist for a certain time after the experiment, the interval between the two perforations remains the same, and yet the bone increases in length at its extremities and by terminal layers. The periosteum is reproduced by external layers. In the experiments above mentioned the wire ring was placed above the periosteum, and the old periosteum afterwards found under it."

INVERSION OF THE UTERUS.

D. HUMPHREYS STORER, M.D., reported to the Boston Society for Medical Improvement, April 11, 1842, the following case of inversion of the uterus.

He was called to a woman in labour. In ten or fifteen minutes there came two smart pains, and the child was born. In five minutes the placenta was thrown off. The cord was not touched, except to divide and remove the child. On putting his hand under the clothes, to take away, as he supposed, the placenta, he found that he had hold of the uterus with the placenta attached. He removed the placenta, put his fingers to the fundus of the uterus, and passed it up without the slightest difficulty. There was some flowing from the uterus where the placenta was detached, but not great, and none after it had passed up. The woman was very much prostrated, and for an hour appeared as if she was dying. She however revived, and the next morning was comfortable. This case proves that inversion may take place without the interference of the practitioner; for no traction whatever was

made upon the cord, which was of the usual length, and not encircling the child.

Drs. Dewees, Burns, and Gooch, in cases of inversion, advise when it can be accomplished, the return of the uterus before the removal of the placenta, on account of the dangerous hemorrhage which is otherwise liable to ensue. Dr. Bard recommends the previous removal of the placenta.

Dr. Storer followed in this case the practice of Dr. Bard, and the case with which the uterus was returned, and the happy convalescence thus far, she being as well to-day (the sixteenth day after delivery,) as she had been at the same period during any former pregnancy, proves the course to have been a judicious one. The placenta was very large, and he believed that had he made any attempt to return it, he would have met with difficulty, from its mere bulk. In a case of inverted uterus, related by Dr. Meigs, of Philadelphia, in his Practice of Midwifery, he was unable to return it with the placenta, and at the suggestion of Dr. James, the after-birth was removed from its attachment. Afterwards, with considerable difficulty, a reduction of the organ was effected.

The little blood which was lost after the placenta was removed, in the case reported by Dr. Storer, showed, he thought, that the great dread of uterine hemorrhage, which is felt by physicians from the removal of the placenta, even should no uterine contraction immediately occur, is not well founded. As soon as the placenta was detached, the hæmorrhage ceased, and although the uterus was so completely relaxed as to allow the hand to pass with perfect freedom, without the slightest muscular contraction being perceived, there was no bleeding.—*American Journ. of Med. Sciences.*

ON A VERY SIMPLE MEANS OF ARRESTING EPISTAXIS.

By DR. NEGRIER, of Angers.

THIS consists in nothing more than closing with the opposite hand the nostril from which the blood flows, while the arm of the same side is raised perpendicularly above the head. In every instance in which he has had recourse to this means during the past three years, M. Négrier has always found that it suspended the hæmorrhage: a fact of which he offers the following explanation.

When a person stands in the ordinary posture, with his arms hanging down, the force needed to propel the blood through his upper extremities is about half that which would be required if his arms were raised perpendicularly above his head. But

since the force which sends the blood through the carotid arteries is the same as that which causes it to circulate through the brachial arteries, and there is nothing in the mere position of the arms above the head to stimulate the heart to increased action, it is evident that a less vigorous circulation through the carotids must result from the increased force required to carry on the circulation through the upper extremities.—*Archives Générales de Médecine; and Brit. and For. Med. Review.*

ON THE

TRANSFORMATION OF CALOMEL INTO CORROSIVE SUBLIMATE,

UNDER THE INFLUENCE OF THE CHLORIDES OF THE ALKALIES.

By M. LEPAGE.

M. J. RIGHINI D'OLLEGIO, in a note relative to the action of steam on the protochloride of mercury, has given the result of some experiments which he undertook with the view of determining whether, as has been stated latterly, the protochloride of mercury is transformed into the perchloride under the influence of the chlorides of the alkalies, at the temperature of the human body.

The conclusions announced by this Italian chemist have been entirely corroborated by the repeated observations I have made on the same subject. The following are the results of my experiments:—

1st. Protochloride of mercury, perfectly free from perchloride, and mixed with an equal weight of hydrochlorate of ammonia, or of a chloride of an alkali, digested in distilled water at a temperature of from 100° to 104° Fahr. during twenty-four, thirty-six, and even forty-eight hours, does not change colour. The liquor, when filtered, has never indicated, by any reaction, the presence of even a trace of a mercurial salt.

Pigeons that were made to drink this liquor during several days in succession suffered no injury. There appeared to be no diminution in the original weight of the calomel.

2d. The same mixture, exposed to a temperature of from 120° to 140° Fahr. afforded a liquid which comported itself with reagents, and in its action on the animal economy, precisely the same as the last mentioned.

3d. Nevertheless, by continued boiling, and under the influence of a large excess of chlorine, the transformation does take place; but it is even then only partial.—*Journal de Chimie Médicale; and Pharmaceutical Journal.*

ADVANCED STAGE OF THE PUTREFACTION OF THE BRAIN,

WITHOUT ANY CORRESPONDING APPEAR-
ANCES IN THE REST OF THE BODY.

M. MILLET calls the attention of medical jurists to the facts of the following case. On the 29th of August, 1840, an individual (a patient of M. Leuret) labouring under dementia and general paralysis expired. The body was, a few hours thereafter, removed to a cool room and laid on a zinc table. Here it remained during forty-one hours, when the dissection commenced. The temperature was about 86° of Fahrenheit.

The dura mater was found strongly adhering in several places. After separating it, and opening into the brain, the cerebral mass of both hemispheres was seen converted into a yellowish-green fluid streaked with blood, of an offensive and penetrating odour. In the midst of this putrid mass, near the left corpus striatum, there was a portion more solid and resisting, evidently the result of a ruptured vessel (*un foyer apoplectique*.) It was surrounded by a number of whitish vesicles, which on being opened, discharged a brick-red matter.

When the cerebral mass was spread on the table, it was scarcely possible to distinguish any of the circumvolutions—so complete had been the progress of putrefaction. Indeed, the lower part of the brain was green, and more spotted than the upper. The cerebellum was also in a state of complete solution, and even the spinal marrow, on being traced, was in a similar condition, and of a gray colour passing to green.

On the other hand, the right lung was healthy, but engorged; the left lung bore the marks of effusion, with some recently formed membranes; the heart was flaccid and discoloured; *the stomach and intestines healthy*; the liver and spleen a little softened and enlarged; the muscles of the trunk and extremities firm and hard; and the external appearance as usual in a dead body, except that the skin of the superior extremities was slightly greenish.

M. Millet inquires, if the head of this individual had been separated from the body (as in a case of assassination), any medical jurist would have recognized their connection, or whether he would assign so short a period since death as two days?—*American Journ.*; and *Annales d'Hygiène*.

A PERFECT WET-NURSE.

In choosing a wet-nurse, how many rocks are to be avoided! We must consider her age, her constitution or temperament, her health, her

character, her morals, her habitation, her way of living, and the quantity and quality of her milk. Her age should be between 20 and 35; she should be of a good constitution, and rather plump; she must be habitually healthy, and exempt from every disease, without apparent deformity, dark rather than fair, and never red-haired; her mouth must be embellished with fine teeth, her gums firm, her breath sweet, her breasts of an average size, variegated with bluish veins, the areola rather high, and the nipple well pierced and of a proper length. A woman must be rejected whose skin is covered with eruptions, whose perspiration has a strong odour, or who is afflicted with leucorrhœa, swelled glands, &c.—Capuron, *Cours d'Accouchemens*, Sixième Edit.

CASE OF INTERMITTENT MADNESS.

It is related that there was a carpenter, who when at home was a sober workman, and was skilful in measuring wood, cutting, planing, and nailing it, or in building a house; and he used to talk and strike a bargain properly with his customers. Within his workshop, he was of sound mind; if, however, he went out to the market-place, to the bath, or on any other business, he first laid down his tools and groaned, and then shrugged up his shoulders; but when he had got out of sight of his family, away from his work and premises, he was quite maniacal; but if he went back immediately, he came to himself also; so that his understanding had the same limit as his homestead.—*Areteus on the Causes and Symptoms of Chronic Diseases*, Book I.

BILLS OF MORTALITY.

In the sixteenth century we have, "given in reward to the Clerk of Coleman Street, for often time bringing bills of the sickness in town, XII^d." (Gage's Hengrave, 205.) So that they served instead of newspapers.—*Fosbroke's Encycl. of Antiq.*

QUACKS IN THE OLDEN TIME.

ARTHUR DEE was summoned before the censors for much the same crime; he having hanged out a table, in which he exposed to sale several medicines, by which many diseases were said to be certainly cured. This crime was deemed such an intolerable cheat and imposture, that the Censors ordered him to appear with his remedies in order to the inflicting a due penalty upon him.—*Goodall's History of the College of Physicians*, 1684.

ACONITINE.

POGGENDORFF'S ANNALS.

THIS organic base was discovered by Hesse in the *Aconitum Napellus* L. In the herb it is combined with an acid, the nature of which is at present unknown.

For its preparation, the dry pungent leaves are digested with spirit of wine (best in a Real's press), and the concentrated tincture mixed with hydrate of lime. The aconitine then remains in solution in the alcoholic liquor. After being separated from the precipitate produced by filtration, the liquor is mixed with dilute sulphuric acid, which precipitates the whole of the lime in the form of gypsum. The spirit of wine is partly recovered by distillation, and the residue [an impure sulphate of aconitine] mixed with water. The rest of the alcohol contained therein is removed by gentle evaporation, and the impure aconitine precipitated by carbonate of potassa.

The precipitate being pressed between paper, is dissolved in spirit of wine, and its colour removed by animal charcoal, when the solution yields, on evaporation, pure aconitine. A further purification and removal of colour may be attained by dissolving it again in sulphuric acid, decomposing the sulphate with hydrate of lime, and extracting the aconitine from the precipitate by ether.

Pure aconitine crystallizes from dilute alcohol in white grains, or it remains behind, if the solution be spontaneously evaporated, as a colourless, shining, and transparent mass. It has no odour, and its taste is at first bitter, then pungent and acrid. It is very poisonous, dilates the pupil, has an alkaline reaction, and perfectly neutralizes acids. It resists the action of the air, easily fuses without volatilizing, and, if further heated, yields several products of decomposition containing ammonia.

Aconitine is soluble in 50 parts of hot, and in 150 parts of cold water. The hot solution yields no deposit on cooling. It dissolves in spirit of wine, and in ether. Chloride of platina does not precipitate its solutions. The atomic weight is at present unknown.

A simplification of the method of manufacturing aconitine, especially if a larger product could be obtained, would secure to the medical art a valuable remedy.—*Hdwtb. d. Chemie von Liebig u. Poggendorff.*

The Editor of the *Annals of Chymistry*, from whose journal we extract the above, adds, that he has had occasion to prepare aconitine several times, on account of the exorbitant price demanded for it (3s. per grain), and has found the use of lime far preferable to ammonia, which latter is directed in the *Ph. L.*

WE have received a number of Poggendorff's *Annalen der Physik und Chemie*, being the 9th number for 1842. Among other articles, it contains one of considerable length on the latency of light by Lewis Moser; observations on a peculiar state of iron, by C. F. Schönbein; a method of ascertaining the constants of the voltaic pile by M. H. Jacobi; and one on galvanic piles constructed with chromic acid, by the editor.

NOTE FROM DR. MARSHALL HALL.

To the Editor of the Medical Gazette.

Sir,

OBSERVING an advertisement on the cover of the last number of your journal, relative to the publication of my lectures, I think it proper to make the following statement.

The short-hand writer of the Medical Times called upon me a few days before the commencement of my lectures at St. Thomas's, to say that it was his "*intention*" to take down my lectures for that publication, adding that, as he was not versed in medical terms, it would be a service to *him* if I would correct any verbal errors in his MS. I replied that I had no objection to do so; preferring that my lectures, if published at all, should be published correctly. When I read over the notes of the first lecture, I found them, from the cause assigned, so incorrect, that it became necessary to re-write them. This too, from the same motive, I was also ready to do, time being given. But having consented to correct my lectures for correctness' sake, I did not expect that the matter would be made public, as if I had entered into a spontaneous arrangement with the editor of that publication. I beg to add that, on seeing the advertisement on the cover of your journal, I immediately addressed that gentleman, withdrawing any co-operation whatever in this matter.

I am, sir,

Your obedient servant,

MARSHALL HALL.

Manchester Square, Dec. 10, 1842.

[Bearing the same date with the preceding, the following notice appears in the "*Medical Times*,"]

"We may announce, that we commence next week giving Dr. Marshall Hall's Lectures (now in course of delivery at St. Thomas's Hospital) on the Diagnosis, Pathology, and Treatment of Diseases of the Nervous System—a set reported verbatim expressly for the Medical Times, and carefully revised by the distinguished lecturer."—*Medical Times*, Dec. 10th.

MEDICAL OFFICERS UNDER THE POOR LAW.

To the Editor of the Medical Gazette.

SIR,

A PARAGRAPH has appeared in some of the provincial papers, stating that the Poor Law Commissioners have removed from the medical officers under their control, all members of the profession who hold either Scotch degrees in medicine, or Scotch diplomas of surgery. Is this statement true? I doubt not many of your readers would like to be informed on this point. When a reply appears, I may, perhaps, communicate with you on this subject.—I remain, sir,

Your obedient servant,

E. M. R.

December 10, 1842.

[Can any of our readers inform us how the fact stands?—ED. GAZ.]

MEDICAL QUERIES.

To the Editor of the Medical Gazette.

SIR,

CAN you or any of your readers answer the following queries:—

A person dies in the provinces under suspicious circumstances, and a coroner's inquest is demanded.

1. The opinion of a member of the College of Surgeons is taken, he not being a Member of Apothecaries' Hall.

2. The opinion of a member of the Hall is taken, he not being a member of the College of Surgeons.

3. The opinion of a physician is taken, he not having the license of the London College of Physicians.

Now, in how far valid is the opinion of these three individuals, and in what instance would the verdict of the jury be vitiated, seeing that the Act says, that the coroner is to apply to a *legal* practitioner.—I am, sir,

Your obedient servant,

IATROS.

[Can any of our readers assist us in answering our correspondent?—ED. GAZ.]

BOOKS RECEIVED.

Chemistry of Animal Bodies. By Thomas Thomson, M.D., Regius Professor of Chemistry in the University of Glasgow, &c.

On Gravel, Calculus, and Gout; chiefly an Application of Professor Liebig's Physiology to the Prevention and Cure of these Diseases. By H. Bence Jones, M.A. Cantab., Licentiate of the College of Physicians, &c.

ROYAL COLLEGE OF SURGEONS.

LIST OF GENTLEMEN ADMITTED MEMBERS.

Friday, December 9, 1842.

J. Robinson.—B. A. Smith.—P. P. Travers.—R. Haynes.—H. Adkins.—T. G. Beall.—G. Pycroft.—T. Jones.—E. Emspon.—T. G. Gurdon.—H. J. Sanderson.

A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, December 3, 1842.

Small Pox	16
Measles	27
Scarlatina	30
Hooing Cough	21
Croup	7
Thrush	3
Diarrhœa	6
Dysentery	4
Cholera	0
Influenza	2
Typhus	24
Erysipelas	10
Syphilis	0
Hydrophobia	0
Diseases of the Brain, Nerves, and Senses ..	161
Diseases of the Lungs and other Organs of Respiration	283
Diseases of the Heart and Blood-vessels	20
Diseases of the Stomach, Liver, and other Organs of Digestion	59
Diseases of the Kidneys, &c.....	8
Childbed	5
Ovarian Dropsy	0
Disease of Uterus, &c.	2
Rheumatism	3
Diseases of Joints, &c.	3
Ulcer	0
Fistula	1
Diseases of Skin, &c.	0
Diseases of Uncertain Seat	83
Old Age or Natural Decay	70
Deaths by Violence, Privation, or Intemperance	33
Causes not specified	2

Deaths from all Causes

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude $51^{\circ} 37' 32''$ N. Longitude $0^{\circ} 3' 51''$ W. of Greenwich.

December.	THERMOMETER.		BAROMETER.	
Wednesday 7	from	35 to 40	30.21 to	30.25
Thursday . 8		30 39	30.30	30.32
Friday . . . 9		27 43	30.30	30.25
Saturday . 10		34 42	30.16	30.09
Sunday . . 11		31 42	29.95	29.85
Monday . . 12		46 56	29.74	29.89
Tuesday . 13		50 57	29.90	29.96

Wind, N.W. and N. on the 8th and 9th; otherwise S. and S.E.

Generally overcast: slight fog in the mornings and evenings of the 7th and 8th: a little rain fell on the evenings of the 9th and 10th, also on the morning of the 12th.

Rain fallen, .31 of an inch.

CHARLES HENRY ADAMS.

NOTICE.—We regret that we have been unable to insert Mr. Walne's paper in our present number. It shall appear in our next.

WILSON & OGILVY, 57, Skinner Street, London.

THE
LONDON MEDICAL GAZETTE,
BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, DECEMBER 23, 1842.

LECTURES
ON THE
THEORY AND PRACTICE OF
MIDWIFERY,

*Delivered in the Theatre of St. George's
Hospital,*

By ROBERT LEE, M.D. F.R.S.

LECTURE X.

On the growth and enlargement of the uterus during pregnancy, and the structure of its coats, blood-vessels, and absorbents, at the end of the ninth month.

CESSATION of the catamenia, sense of fulness, weight or uneasiness in the region of the uterus and bladder, irritability of stomach, and of the whole nervous and vascular systems, are the most common symptoms of early pregnancy. Though the uterus, at the end of the second month, be nearly twice as large as in the unimpregnated state, its fundus cannot be felt in the hypogastrium, and, except a little fulness and softness, there is no change in the orifice and cervix. In the third month, the lips of the os uteri are thick and soft, and the finger can be introduced a little way within them, and the Nabothian glands felt enlarged. The neck of the uterus is also thicker, softer, and more elastic, than before conception. The fundus uteri can sometimes be distinctly perceived above the brim of the pelvis at the end of the third month, but more frequently it cannot before the end of the fourth. About twelve weeks from the period of impregnation, the circulation of the blood in the walls of the uterus can occasionally be heard; but the pulsations of the foetal heart are seldom perceptible before the fifth month. The body of the uterus, after the middle period of pregnancy, continues to enlarge till the end of the ninth month, while its cervix is gradually becoming shorter, and the orifice thicker and softer. The umbilicus

protrudes, and white lines are seen on the sides of the abdomen. Not only can the sound of the foetal heart, and the pulsation of the uterine blood-vessels, be distinctly heard during the latter month, but the movements of the fœtus can be felt by applying the hand over the uterus. The areolæ become broad and dark, and the glands around the nipples enlarged, and milk is often secreted.

At the end of the ninth month, if the abdominal parietes be cut open soon after death, and before the liquor amnii has escaped, the uterus is seen of a pyriform shape, like a great muscular sac half distended, occupying the whole hypogastric, umbilical, and epigastric regions. The small intestines and omentum cover its fundus, and on the sides it is surrounded by the great intestines. The peritoneum which covers the anterior surface of the uterus is in immediate contact with the peritoneum lining the abdominal muscles. The nates and head of the fœtus cause its soft plastic walls to project externally wherever they are situated within; and not unfrequently the uterus stretches out much more on one side than the other. The figure of the uterus is also modified by all the parts which surround it, especially by the spine, brim of the pelvis, and the abdominal muscles, which, pressing it before and behind, flatten the anterior and posterior surfaces. In the erect position of the body, especially if the abdominal muscles are relaxed, the fundus uteri falls forward, so that the axis of the uterus forms a great angle with the spinal column and brim of the pelvis, and approaches the horizontal line. A dull sound is emitted by the gravid uterus on percussion, and a clear sound by the intestines around it. Ovarian cysts and tumors likewise emit a dull sound: from this circumstance, and from the unequal resistance they afford to the hand, such morbid enlargements are more frequently mistaken for the gravid uterus than any other uterine tumors.

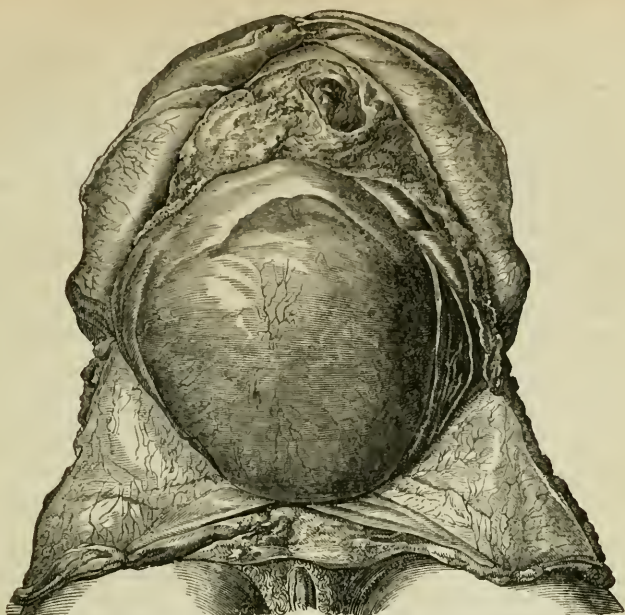


In the preceding figure from Dr. Hunter are represented the gravid uterus and its contents, and the vagina, at the beginning of the fifth month of pregnancy. The uterus is opened, shewing the decidua, through which the foetus appears in its usual attitude, with the head over the cervix. One turn of the navel-string is round the neck, and another twisted round the left ankle, and the left arm is applied over the face. The decidual cavity is not completely obliterated. The cervix is considerably shortened, and the lips thickened.

From this cast of Dr. Hunter's upon the table, and from this engraving, (see top of next page) you will form a correct idea of the size, situation, and general appearance, which the gravid uterus presents at the end of the ninth month.

These diagrams (see figs. 1, 2, and 3, next page) (from Maygrier) represent nothing but the shortening of the cervix in the progress of pregnancy. 1, is the os uteri in the early months; 2, shews the cervix uteri in the seventh month; and 3, the state of the cervix when nearly obliterated before labour commences. Dr. Montgomery's 2d figure, Plate IX., shews the state of the os uteri in the seventh month far more accurately than these figures, with the Nabothian glands developed and prominent, and a notch in the orifice from previous delivery.

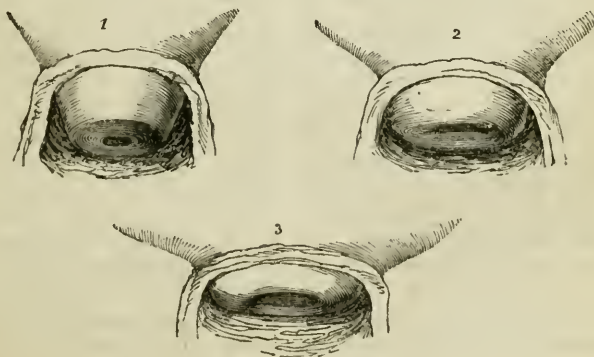
The middle coat of the human gravid uterus is evidently composed of muscular fasciculi, mixed up with cellular membrane, blood-vessels, absorbents, and nerves. It is easy to demonstrate the existence of muscular fibres in the uteri of quadrupeds, and to trace them proceeding in a longitudinal direction principally from the cornua to the body of the uterus, where they become so interlaced that it is impossible to trace them any further, and shew their course satisfactorily. In the human uterus it is much more difficult to trace the course and arrangement of the muscular fasciculi, even more difficult than in the heart, and they present little else, as Dr. Hunter has observed, but irregularity and confusion. "In a woman," he says, "who died seven days after delivery, I gave up the uterus to the examination of the muscular fibres, and traced them very carefully. I stretched it gradually in warm water, then inverted it, to have a full view of its inner surface. The remains of the decidua had been melted down, and passed off with the lochia, so that the fasciculated stratum of muscular fibres appeared to be bare, and to make the internal surface of the uterus. In a great number of places, but particularly where the placenta had been fixed, the fasciculi left oval spaces between them for the passage of arteries and veins, somewhat like those separations in the tendinous fibres of the abdomen and loins, where vessels



pass out to the cellular membrane and integuments. The cervix uteri, where the penniform rugæ are situated, had not such regular nor so large fasciculi as the rest of the uterus. In the body of the uterus the fibres were very regularly circular. The fundus was made up of two concentric circular planes of fibres, at the very centre of which was the orifice of the fallopian tube. The better to conceive this arrangement of the internal muscular fibres, we may suppose each corner of the fundus uteri, where the tube is inserted, to be stretched or drawn out, so as to make two horns, or a bifid uterus, as in the quadruped; then, if we understand the inner fibres to be circular in

every part of the uterus, we understand clearly how they will be circular in the human uterus upon its body, and likewise circular and concentric at each corner of the uterus. When this internal stratum was removed, the fasciculated appearance and regular direction of the fibres was less and less apparent in proportion as I dissected outwards; which seemed, in a great measure, to be owing to the infinite number of the branches and communications of the large veins."

The uterus and its appendages are supplied with blood from the spermatic and hypogastric arteries. The spermatics, after sending branches to the tubes and ovaria, pass down



to the uterus, and there anastomose on its sides with the uterine branches of the hypogastrics. You have seen, from injected preparations, that the upper part of the uterus is chiefly supplied by the spermatic arteries, and the body, and cervix, and vagina, solely by the hypogastrics. At the full period of pregnancy all these arteries and veins of the uterus are greatly enlarged. When the arteries, which are always tortuous, reach the uterus, they do not run any distance under the peritoneum, but immediately plunge into the muscular coat, and pass toward the inner surface, and especially to the part where the placenta is attached, ramifying as they proceed. Those branches which reach the lining membrane terminate in the tortuous canals in the placental decidua. Those which do not arrive at the inner surface ramify upon the coats of the veins. The veins appear to be enlarged even in a still greater degree than the arteries. In no organ of the body does there exist such a vast collection of large veins as in the gravid uterus at the full period. If the veins could all be dissected out and put together, they would form a membranous expansion of great extent; so great that I am almost afraid to state the extent of surface which I believe they would cover. They are also, like the arteries, chiefly situated in that part of the uterus where the placenta is attached; and if the placenta be removed, you will see the veins opening into the cavity of the uterus by large oblique apertures with smooth edges. In this preparation the placenta is partially separated, and bristles have been introduced into these valvular-like venous openings in the lining membrane. These veins have no proper valves, so that if water, or any fluid, be thrown into the trunks of the hypogastric and spermatic veins, it will flow in a full stream into the cavity of the uterus. It is in this way, I conceive, and also from the exposed arteries, that such immense quantities of blood are often discharged in so short a time from the uterus during labour. In the uteri of some great quadrupeds, as the mare, the veins have valves, but not so perfect as to prevent injections passing from their trunks to their branches. If you trace the veins in the human uterus from these smooth openings in the lining membrane, you will see them entering obliquely into one another, and increasing in size as they reach the surface and sides of the uterus. I have filled the whole venous system of the uterus by tying the trunks of the spermatic and hypogastric veins, and pouring injection into the cavity of the uterus. In this gravid uterus at the full period, the aorta and its branches, and the vena cava and the iliac veins in the muscular coat, are filled with injection, and you can

see how very large the veins are in the wall of the uterus to which the placenta is attached. From this preparation you will easily perceive how readily the venous circulation in the uterus and placenta may be interrupted by all the different derangements of function in the thoracic and abdominal viscera, and how important it must be to obviate all obstructions in these during pregnancy.

Dr. Hunter states that Mr. Cruikshank was the first who observed at the Anatomical School of Great Windmill Street, the lymphatics in the gravid uterus, and that he injected them with great success in several subjects. "They are more numerous," he adds, "and many of them larger than could be imagined: from which it is manifest that a copious absorption is carried on in the uterus towards the mother. The lymphatics pervade its substance universally: its peritoneal coat appears like that of a calf's spleen, to be interwoven with a crowded plexus of these vessels; and where they get to the sides of the uterus, when filled with mercury, some of them are even larger than a goose-quill. Some are remarkably varicose, or enlarged at particular places. They pass from the sides of the uterus, many with the spermatic vessels, but the greater number and the larger with the hypogastrics. Of these last, some pass into glands on the side of the vagina, others meet with no glands till they have reached the side of the pelvis, when they run into the glands of the iliac plexus; from both of which they pass into the lumbar plexus, where they are lost among the absorbents of the lower extremities, and the external parts of generation. Besides the lymphatic vessels of the uterus, there are others, as we hinted above, belonging to the ovaria and fallopian tubes, which follow the course of the spermatic arteries and veins. They anastomose with the lymphatics of the uterus, and terminate in glands which are placed upon the sides of the lumbar vertebræ, near the origin of these blood-vessels: here they become mixed with the lymphatics of the lumbar plexus, and enter with them into the lower end of the thoracic duct. The spermatic lymphatics enlarge during pregnancy, in the same manner as the blood-vessels: and for this reason they are both readily seen and injected. The reason why the blood-vessels, lymphatics, and nerves of the ovaria, and the fallopian tubes, have their origin in the loins, is the same with that of the origin of similar vessels and nerves in the male; they are not placed in the cavity of the pelvis in the early foetal state, but upon the *psosæ* muscles, some little way under the kidneys. It is natural, therefore, that these vessels and nerves should arise near the vessels and nerves of these organs." It is here said that the absorbents

pervade the substance of the uterus universally, but their course and structure are not described, and it is not stated that they were traced to the inner surface, and that they had valves. When at Glasgow some years ago, I neglected to enquire about these preparations made by Mr. Cruikshank, whether they had been preserved in the Museum. If they had, I think Dr. Burns would have described the absorbents of the uterus more minutely than he has done. He says merely, that they are large and numerous. Having sacrificed all the gravid uteri which I have met with to nerves, and blood-vessels, and other structures, I regret extremely that I have no preparation to demonstrate the absorbents of the human gravid uterus, and I have never seen a preparation in which they were injected. There were some, I am informed, in the collection of Sir Charles Bell, which went to Edinburgh, but I have no recollection of them. I have often traced absorbents with the spermatic vessels to the uterus, and also with the hypogastric, but never into the substance of the uterus to any distance, and I do not know any thing of their course except from what I have seen in cases of uterine inflammation after delivery, where they were distended with pus, and where they appeared to accompany the veins; had a beaded appearance, with numerous valves, and their coats were thin and transparent. They are seen distended with pus in this drawing, and in these coloured plates of Cruveilhier and Carswell. There are two views of the healthy absorbents of the uterus in Mascagni's plates, and also in M. Moreau's work, which I now shew you.

Malpighi describes the absorbents of the uterus in some quadrupeds, and he says they form a great system of vessels. In this gravid uterus of the mare, [placed before you] they have been very successfully injected with blue size, and their course traced from the horns of the uterus down to the cervix accompanying the trunks of the uterine branches of the hypogastric veins. You will see that the trunks of the absorbents chiefly follow the veins, and that they are provided with numerous valves, which are so perfect that neither air, mercury, nor size, can be made to pass into them in the retrograde direction. I introduced first a small blow-pipe into one of the branches in the right horn, and the air ran forward and filled the whole vessel, which was perfectly transparent to the neck of the uterus. Having succeeded in filling them with air, I did so with mercury, and it also flowed forward, but it was too heavy, and soon burst through their delicate coats. Size being much lighter, after allowing all the mercury to escape, it was thrown in, and has been retained, and all the absorbents, at least all the principal branches, are filled with blue size,

and present a very beautiful appearance. Small arteries injected with vermilion, and even filaments of nerves, are distinctly seen ramifying upon the coats of the absorbents. (Several inches of one of the absorbent trunks have been cut out and suspended in spirit to shew this, and it forms an interesting preparation) [exhibiting it.] I thought this was the first time the arteries of the coats of the uterine absorbents had been seen, but I was mistaken, for Cruikshank describes the arteries of these vessels. I believe, however, this is the first time filaments of nerves have been seen on the coats of the absorbents, which proves that they have nervi and vasa vasorum, like blood-vessels. Under the peritoneum of the left horn of this uterus, you can see numerous small absorbent vessels entering a sac about the size of a large pin's-head: from this sac you can see three absorbent vessels passing out, which have also been filled with blue injection, and which run forward about half an inch, and enter another oblong sac about twice the size of the first. Numerous minute absorbents enter this second sac, which is much thicker than any of the absorbents entering it, or indeed than the trunk of the absorbents near the neck of the uterus. From the second lymphatic sac a large absorbent vessel passes out, which proceeds down to the body of the uterus, receiving numerous other branches, and gradually enlarging till it attains the size of a small goose-quill. I suspect that these lymphatic sacs are analogous to those which exist in reptiles, which are called lymphatic hearts, and that they collect and propel the fluid along the absorbents.

If the absorbents of the human uterus are equally developed during gestation, and Dr. Hunter's description of them makes it certain that they are so, it is obvious that they are intended to perform another function besides that of carrying on "a copious absorption in the uterus towards the mother during pregnancy." The sudden removal of the uterine structures after delivery by absorption is probably the most important office they perform, and the cause of their enlargement to such a vast size during the latter months of pregnancy.

REMOVAL OF A DROPSICAL OVARIUM, ENTIRE,

BY THE LARGE ABDOMINAL SECTION.

BY D. HENRY WALNE, ESQ.

(For the London Medical Gazette.)

It is now about twenty years since that able physiologist and discriminating physician, Dr. James Blundell, in

calling the attention of surgeons to a series of facts and experiments calculated to illustrate its truth, made this observation:—"Of all the branches of surgery, there is none, I conceive, which in this country admits of greater improvement than the surgery of the abdomen;" and in prosecuting his comprehensive view of the subject, among other suggestions, foreign to my present purpose, he advanced the opinion that "extirpation of the ovarian cyst in scirrhus combined with dropsy, or in simple dropsy," would, as an operation, "ultimately come into general use." He was enabled, indeed, to refer to two cases only, in which an operation had been performed, coming so immediately under his notice as to justify citation, one of which was successful, and one otherwise.

Of these two cases, one certainly, that of Dr. Nathan Smith, was treated by what may now be best distinguished by the term minor operation,* the incision into the abdomen, as we learn from another source, being of three inches extent only, and reduction of the bulk of the tumour having been effected by tapping the cyst, and withdrawing eight pints of fluid before extraction of the sac itself. It is worthy of remark that adhesion of the cyst to the omentum existed in this instance, and was divided by the knife, yet the patient recovered.

It does not appear quite clearly, by Dr. Blundell's short account of the other case, (given with other objects than its description), what exact steps constituted the operation, but I infer that a more extensive incision was practised, from the circumstance of the sac being "drawn forth before it was cut into:" yet it could not have been performed by the full-sized abdominal section, to which the name of major operation justly applies†.

* To readers who have only slightly or never before given any attention to this subject, it may be desirable to remark that two forms of operation have been proposed for the cure of ovarian encysted dropsical disease, chiefly distinguished by the circumstance of the one being practised by a small, the other by a free large incision into the abdomen. Hence the terms major and minor operation, which are found convenient in speaking of them. In the one the bulk of the disease must be reduced before extraction; in the other it is, if possible, removed entire.

† Since writing the above remark, Dr. Blundell has informed me that the section was of the extent of three inches and a half. "The ovary was first tapped, then drawn out, and in the third place cut into, and away."

Not long after the publication of Dr. Blundell's *Physiological Researches*, which were the substance of papers read to the *Medico-Chirurgical Society* several years previously, some accounts fell into the hands of Mr. Lizars, of Edinburgh, of so surprising a character, and at the same time so very imperfect, that they did not gain immediate or general credence; but which have since been admitted to be unquestionably true. By these it was shewn that Dr. M'Dowal, of Danville, in Kentucky, had, as early as 1809, successfully performed one operation for extirpation of a diseased ovary, practising an extensive incision into the abdomen; and between that period, and May 1816, two other nearly similar operations. Mr. Lizars not only published these accounts, but having himself made a succession of trials, of a bold and enterprising character, directed to the same great object which had occupied the mind of Dr. Blundell, and the adventurous spirit of Dr. M'Dowal and Dr. Nathan Smith—viz. the cure of an otherwise hopeless disease—had the manly candour, and moral courage, equalling his surgical intrepidity, to give to the professional world a full narrative of his unsuccessful attempts; coupled, however, with one triumphant case of the major operation, in which, through an opening of twelve inches into the abdominal cavity, he had succeeded in removing a large diseased ovary, complicated with ascites to the extent of a gallon and a half of serous fluid. His patient so completely recovered that she paid a visit to London by the invitation of Dr. Blundell, and the most incredulous were convinced of the practicability, at least, of this form of operation. Still, however, an extraordinary apathy on the subject continued to affect the whole profession in Great Britain, and I am not aware that this operation has ever, till within these few months, been repeated by a British surgeon; and I believe that it never had been performed at all in England, before Dr. Charles Clay, of Manchester, on the 12th of September last, operated in his first case, nor in London, until, on November 6th, I operated in the case I am about to record. The minor operation had, indeed, been performed in different parts of the country by several gentlemen, with various success, but it is clearly shewn

to be inapplicable to a large proportion of the examples of the disease which come under treatment.

Between four and five months ago a case of ovarian disease presented itself which I thought might be treated by operation, with a reasonable prospect of success, as it held out the probability of freedom from adhesion, and did not appear to be of a very solid character. An accidental disturbance of the health of my patient, and the period required for her comfortable restoration by a visit to the country, had served to postpone my purpose, so that by the time at which I had proposed to operate, Dr. C. Clay's first case was published; and this served to decide my choice of operation. I determined to extirpate the diseased ovary by the large abdominal section, and found a ready approval of my purpose on the part of Dr. Blundell, whose careful investigation of the case had already confirmed my own opinion of its nature.

Accordingly I arranged for the performance of the operation on the 6th of November, but had the still farther satisfaction of seeing Dr. Clay's second successful case in print on the 5th, and of receiving the same day an obliging answer to two or three inquiries as to minor details of the operation, which, though a stranger to him, I had not hesitated to make.

My reasons for preferring to operate by the larger section were these: that it does not appear that a less extent of wound diminishes the danger of the operation in any material degree, if at all; and that the complications which occasionally present without being foreseen, and which, indeed, do not admit of being foreseen in every instance, can be better appreciated, and more suitably dealt with by the surgeon, through a free opening than through a small one.

For example, the effusion of blood, or the escape of fluid from the cyst into the peritoneum, either of which is a most dangerous complication of the difficulties inseparable from any method of operating, can with no certainty be avoided in the minor, but may assuredly be remedied if they should occur in the major operation. Adhesions, too, can be divided, the parts can be cleansed and arteries tied with facility, if necessary, and the operator's mind freed from doubt as to the state of the internal parts, before he carefully

closes the wound. These are circumstances which the experienced operator can appreciate, and if he should not be blinded by an undue apprehension of peritoneal inflammation, he will be sure to estimate highly such palpable advantages.

To proceed with the case:—

Mrs. F——, of — Street, Marylebone, æt. 58, applied to me some time in the month of July with great abdominal enlargement, equalling indeed that of pregnancy at the full period. The catamenia had ceased four years. She used to be subject to floodings. Had given birth to five living children, and miscarried several times. A rounded prominence of the abdomen, of a circumscribed character, with fluctuation, and moveable as a whole, was found on examination; whilst the health was good, and there was no sign of general dropsy present. She had observed her gradual increase of size for more than two years, and, as she could not account for it, had lately felt uneasy on the subject, though it caused her no pain, and was, indeed, only an encumbrance, and made her unpleasantly remarkable. From scrob. cordis to pubes was $17\frac{1}{2}$ inches; her circumference was $37\frac{1}{2}$ inches. I pronounced her case, on investigation, one of ovarian disease, and after a few interviews, referred her for confirmation of my opinion to Dr. Blundell. Having obtained this, I began to hint at the means of cure, and having gradually gained her confidence more and more, and as gradually intimated my purpose; not concealing from her or her family the risk attending the measure; after the cause of postponement above alluded to had been removed, fixed the day of operation, with her ready and full concurrence, and enlisted my friendly coadjutors for the occasion. A few hours before the time appointed, I went over the steps of the operation with a part of these friends; to one of whom was assigned the charge of the tumour, exclusive of all other engagements; to another, that of covering the exposed interior parts by the divided skin, the moment opportunity should offer. The temperature of the room was to be raised rather above 70° Fah.; and means were adopted to secure it from change in this respect as much as possible. A mild dose of aperient medicine, given over night, not having

acted, an enema, administered half an hour before the time named, gave the required relief.

Dr. Blundell, Mr. Vincent, Mr. L. Beale, Mr. Law, and Dr. Freund, of Vienna, were punctual, and between 3 and 4 o'clock, P.M., the patient was placed upon a couch, with her feet upon the ground at its end, and her back supported by pillows. Some little preliminary examination having been made, and myself and more fixed assistants having taken our posts, myself seated on her right, for the satisfaction of all parties I commenced with an exploratory incision of the integuments and tendinous expansion, and then of the peritoneum, to the extent of an inch and a half. A finger was passed on each side into the peritoneal cavity, and the fluctuating cyst distinguished quite clearly. No fluid escaped. I now proceeded with the scalpel to enlarge the incision from above downwards, including that already made, to the length of thirteen inches, or a little more, first in the integuments, avoiding the umbilicus, and afterwards in the peritoneum, from the small opening, with a probe-pointed bistoury, guided by two fingers of my left hand, upwards and then downwards to the same extent, being from about three inches below the scrobiculus cordis to within one and a half of the pubes. This accomplished, the wound began to expand on each side, and the tumour to advance gently, but more briskly when its greatest bulge had passed through the wound; demonstrating the propriety of some one being appointed for its management, and giving the most satisfactory evidence of its being mainly free from unnatural attachment. It had not been ascertained with certainty which ovary was affected, but the right was suspected to be the one, and so it proved. I now passed two fingers behind the broad ligament, and Mr. Law sustained the tumour, which might otherwise have fallen forwards. With a needle, having its eye near the point, and fixed in a handle, guided by the two fingers, I passed a double ligature behind the pedicle, and thrusting the needle through the middle of that part, brought its point forward. The ligature was divided, and disentangled from the needle, which was then withdrawn. The tails of the ligature being adjusted for

tying the two halves of the pedicle separately, I now tied one of them, but in doing so the silk broke. The remaining one was used for introducing a second double ligature, with which the former had to be replaced. After tying the pedicle, I divided it between the tumour and the part tied, and, having done so, had the satisfaction to see the huge mass of more than 16 lbs. weight lifted from its place, and carried away by Mr. Law, no adhesions whatever interfering. I now examined the cut end of the pedicle, and tied a considerable artery. At this period the patient became very sick, and made repeated efforts to vomit, but nothing was brought up. Dr. Freund had been in charge of the divided integuments, and closed them over the abdominal viscera, securing the intestines from exposure to air as much as possible. Whilst the retching efforts continued I aided him in this work, and my other friends were taking every care of the patient in other respects. When these had ceased I again looked for bleeding vessels; but as there was a general oozing, rather than any other form of bleeding, it was agreed to tie the pedicle in its entire circumference, some notion prevailing that the needle might have severed a vessel at a distance from the cut surface. I accordingly did this with double staysilk. Bleeding ceased, the wound was cleansed, the other ovary examined by Dr. Blundell, and nothing remained to be done but to close and stitch the wound. About a dozen of interrupted sutures through the integuments, which had been marked before the operation for our guidance at this moment, served to bring the parts together. Long pads of lint were laid down each side of the abdomen a little away from the wound, and strips of a mild adhesive plaster carried over them from one side of the body to the other. A broad bandage, entire at the middle, but slit up into eight roller-heads, and previously laid ready beneath her back, was made comfortably tight, and the ends, after once encircling her, tied on alternate sides of the patient's abdomen. This seemed to give her a satisfactory feeling of security, and drew from her a remark of approval.

At the conclusion of the operation, her pulse was 76, counted by Dr. Blundell: it had been exactly that number

when reckoned by myself the evening before: she was, however, pale and cold, and when laid in bed requested to have something given to quiet her nerves: a bottle of hot water was put to her feet, she was well covered up, and an anodyne administered, with directions to repeat it in an hour: it was composed of $\frac{1}{4}$ gr. Morph. Acetat. and $\frac{3}{4}$ ss. Mist. Camph.; and was so repeated. At 5 o'clock, her pulse was 82. When I visited her at 8, it was 96. She had become warm after the anodyne, and having slept two hours, was now perspiring freely. From this time she was neither cold nor had chilly sensation: on waking from her sound sleep, she was at first a little confused, but this soon ceased, and she was generally quite clear and calm in mind. When the pedicle was tied the first time, she had complained of some pain in the loins, and still more at the second tying of that part; a general smarting of the wound was also, of course, felt. These continued between two and three hours, but had now subsided almost entirely. A sensation of throbbing succeeded, which also ceased in the course of the night. At 12 o'clock, I paid her my final visit, and drew off five ounces of urine. She had slept three hours since 8 o'clock: pulse 94 before, 89 after the use of the catheter. No unfavourable symptoms.

Nov. 7th.—I visited her at 9 A.M., 4, and 11 P.M., and each time used the catheter, withdrawing in all $14\frac{1}{2}$ ounces of urine. The pulse at each visit respectively 90, 96, 86 when asleep, 90 after awaking. Having passed a comfortable night, at least sleeping great part of the time, she also slept a good deal in the day; was free from pain, had no abdominal tenderness, except in the line of the wound, and no distension, flatulency, or sickness; she perspired freely, and was comfortably warm. Had taken nothing but toast-water, and as too little of this even had been given, in the great caution used to avoid distension from any cause, was rather thirsty in the afternoon, but when more was allowed complained towards night that it did not quite suit her stomach. Mint-tea was then proposed, but not taken. A spoonful or two of panada in the evening was the only thing taken besides, until at night her anodyne of $\frac{1}{4}$ gr. Acetate of Morphine and $\frac{3}{4}$ ss. Mist. Camph., was

repeated, which relieved the slight uneasiness of the stomach. The total abstinence observed throughout the day was in accordance with her own feeling as well as my wish, as "she often ate nothing for two days or more when her stomach was out of sorts."

8th.—The second night was not equally good; indeed, she had been somewhat hot and restless, but still perspiring. The thirst continued, and sickness had twice or thrice occurred in the night. Small quantities of soda-water, not in its full activity, were now allowed, and she took a bottle and a half in the course of the day. I visited her four times, and the pulse was noted at each of the visits twice, the catheter, except at mid-day, being used between making the first and second note.

	9 A.M.	2 P.M.	9 P.M.	12½ P.M.
1st trial	91	92	96	84
2d do.	83	91	92	84

3iv. of urine only withdrawn in the morning. I was induced by this circumstance to omit the use of the catheter at 2 o'clock. In the evening I received two messages, and at 9 o'clock found her very uneasy, with a strong desire to pass urine and stool, but afraid to make any effort. The catheter and an enema of warm water afforded great relief. Flatus passed from the bowels, and 3vi. of urine were withdrawn. Vomiting and occasional eructation of wind had occurred. She had changed her posture in bed several times, and was not easily restrained from making imprudent sudden movements in her state of uneasiness. During my 9 o'clock visit this was very much the case, and after one of her movements of this kind she became alarmed by feeling something hot on the skin of the abdomen. On examination I found serum trickling down the skin from the wound. I afterwards suspected that the ligatures which had been left out about two inches from the pubic end of the wound must have been pulled a little way within it at this juncture, as the ends were not visible when I made my first dressing. Being very much relieved by what had been done for her, and the anodyne having been repeated, at half after 12 o'clock I found that three hours of comfortable sleep, and a subsidence of twelve beats in the frequency of the pulse, had been the

happy consequences of the measures. Her mind was clear, and her skin moist all day, but after the anodyne warm and perspiring freely, the tongue moist; but vomiting always disguises the state of the tongue in that respect, so as to render it almost useless as a criterion of the patient's condition.

9th.—Hours of visiting and state of pulse.

	10 A.M.	4 P.M.	11 P.M.
1st trial	100	100	
2d do.	97	97	92

She slept two-thirds of the night, and passed, unaided, ζ ix. of urine before my first visit, and ζ vss. after it. Felt a wish for food, and took panada. The sickness had ceased. She slept in the day, and again took a little simple food at night. It was panada, or something sopped, as biscuit, I believe. Complained of slight pain at the pit of the stomach. The enema and the anodyne were repeated. Her tongue was moist and cleaner, and the skin perspiring.

10th.—Had two motions from the enema last night, and passed ζ ix. of urine at twice. Had been somewhat restless and moving; was thirsty, and had occasional sickness. Took a cup of tea and a little biscuit for breakfast. Skin moist; tongue moist and brown; some griping pain; passed ζ xii. more urine in the course of the day. The temperature of the room, which had been preserved almost uniformly at 70° , or a trifle above that degree, and only once before lowered to 67° for a few hours, was now reduced to 66° . All this day the pulse ranged from 80 to 82, a fall attributable to the free relief of the bowels the previous night, yet some uneasiness of a griping kind was now and then felt. Enema repeated; anodyne conditionally ordered, but not taken.

11th.—She had not had so good a night; vomiting had twice occurred, with strong retching, and she had brought up a good deal of bile: there was constant nausea, and occasional eructation; ζ vj. of urine; no motion; occasional griping; pulse 80. I dressed the wound, removing all the stitches below the umbilicus, but leaving those above that part. I directed that some beef-tea should be given with salt in it.

At mid-day the symptoms were not amended. Pulse 83; tongue dark-

brown, and much coated; her manner drowsy, and her mind at times confused; constant nausea, occasional vomiting, and frequent hiccup, with pain at the navel. These symptoms made me anxious for her safety. They were those of intestinal distress, and reminded me of such as occur in strangulated hernia, and at the ushering in of intestinal fever of a bad form. I speculated on the circumstance of the disappearance of the ligatures, and how they might contribute to the production of the symptoms. I deemed it useless to search for them, as their attachment to the pedicle would render their removal, if found, impracticable; and after conferring with my friends Dr. Blundell and Mr. Vincent, determined to make no attempt of that kind, but give the anodyne, then an enema in two hours, and repeat the anodyne if necessary. All this was done. The first anodyne relieved the sickness, procured her some better sleep, and revived her very much. The enema produced a discharge of flatus and some little feculent matter. She had a tranquil night after the second anodyne, and on the morning of the 12th felt better; having passed ζ xi. of urine in the night, and having been scarcely at all sick. Pulse 79, soft and full; skin warm, and freely perspiring; occasional hiccup, which still causes pain at the navel. Wished for tea and toast, and took some beef-tea with toast in it.

Throughout the day she continued to improve. She passed ζ ix. more urine. At night the enema, and then the anodyne, were repeated: the former produced a motion, which, in part, consisted of a large hard lump of feces; her night was good, and on the

13th.—She had neither pain nor sickness. ζ xvj. of urine passed in as many hours; her tongue was moist, and rapidly cleaning, yet the singultus occasionally returned: this, she said, she was very apt to experience when well, and was partially relieved by sipping water. I dressed the wound, removing the remaining stitches: adhesive matter was covering those parts of it which were not closed, and which, at three points together, amounted to less than three inches. She was cheerful and comfortable at noon, when the wound was dressed, but within a very little time had again some nausea and other symptoms resembling those of

incarcerated hernia. She thought the dressings too tight, and, on raising one end of the strips of plaister, it was found that one of them in particular had been so; it lay over a part of the wound not yet quite closed, where intestine, slightly protected by adhesive matter, was liable to pressure. On my removing this piece of plaister she felt sickish and faint, but immediately after much relieved: it had evidently contributed to the renewal of unpleasant symptoms; and the circumstance is, I think, one of great practical interest, for it confirms the observation which the whole circumstances of the case, after the completion of the operation, are calculated to draw forth, viz., that it is not so much peritoneal inflammation as suffering in the viscera of the abdomen, more particularly the intestines, which is to be apprehended as a consequence of free incision for the removal of diseased ovarium.

Having obtained great relief from the loosening and more lightly adjusting the dressings of the wound, one other cause of uneasiness and anxiety remained. Several hours had elapsed without her having passed her urine, and she felt doubtful of her power to do so: the catheter was accordingly used for the last time. The enema and the anodyne were also repeated.

14th.—She had slept well, and at 5 in the morning voided her urine naturally. No sickness had occurred; her tongue was clean and moist; pulse 78 and soft; passed six. of urine in the day, and, except a slight degree of light-headed feeling, and a rather violent fit of hiccough in the evening, was comfortable throughout this day, and had taken beef-tea, arrow-root, &c., more freely.

R. Fel. Bov. gr. x. h. s. s.

15th.—Passed a tranquil night without the anodyne, and feels quite well; singultus less troublesome; wished for leave to sit up, but felt weak and languid. Ordered a little port wine.

16th.—Better in all respects; relished some chicken.

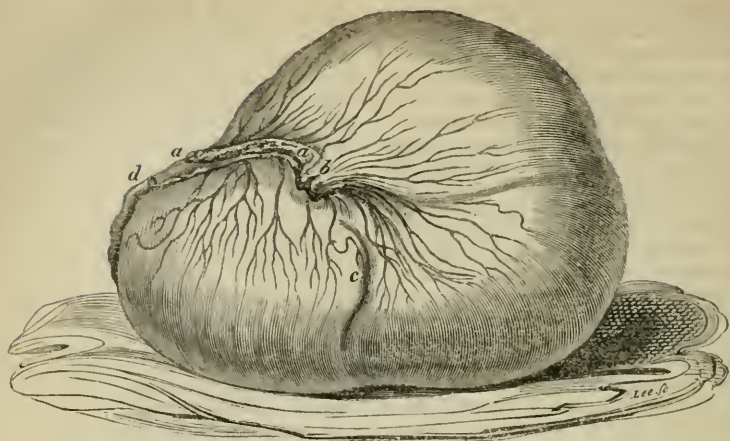
From this time she continued to improve daily. On the 20th, said she felt as if she could stand and walk, but still had some uncomfortable feeling, and slight difficulty in passing her urine. The hiccough did not entirely cease till about this time, though it was

slight. On the 23rd, she sat up several hours; afterwards, when in bed, her pulse was 75. On the 25th the ligatures appeared at the pubic end of the wound, and on the 27th I removed that which had secured the artery of the pedicle. On the 29th she felt quite well; the wound was healed, except a seton-like opening at the lower end of it, where the ligatures were lying, and one point by the umbilicus of redundant granulation of the size of half a pea. It was found requisite to give her a mild rhubarb draught occasionally, or sometimes a little magnesia, as the bowels did not act with quite their accustomed freedom, but in all other respects she was now well, and fast regaining her strength.

I have not interrupted my narrative of the practical details of the case by any description of the diseased part removed by the operation; and the difficulty I might have had in conveying to my readers a correct idea of its character is fortunately rendered trifling by the spirited wood engraving executed by Mr. Lee,* from his own accurate sketch, which he made before any material change in its appearance had occurred.

The greater portion of the mass was fluid, contained in one or more cysts. A substance of about the size of two fists, having at some points a scirrhus hardness and abruptness of form, occupied that part of the tumour where the remains of the fallopian tube, meandering towards its fimbriated extremity, sufficiently declared it to be the ovarium of the right side, much enlarged and changed in structure. The fluid is of the ordinary character of ovarian dropsical fluid, and the solid portion is probably of a scirrhus character; but, as I have thought that the disease as nearly in its actual form and size at the period of its removal, as it could be preserved, is more valuable for the surgical illustration of the subject than when cut into slices for pathological ends, as has been done by hundreds such, to which no other history than that of their fatal influence on the frame that bore them attaches, I have not yet pursued the ordinary course of destructive investi-

* An artist living in Princes Square, Kennington, who takes an interest in such subjects, and whom I feel bound to recommend to the attention of professional men who may have occasion for illustrations in wood.



Side view of the Diseased Ovarium.

a a, Remains of the broad ligament of the uterus divided in the operation; *b*, situation of the principal artery divided; *c*, form of the tumour corresponding with the left crista ilii; *d*, fallopian tube cut across.

Dimensions of the tumor. The greatest circumference taken horizontally, as it lies in the engraving, was 2 feet 10 $\frac{3}{4}$ inches. Ditto, taken lengthwise, over 2 ft. 8 in. Ditto, across ditto, 2 ft. 4 in.

gation with this one; convinced that in its present state it suggests a useful reflection to those practitioners within its reach, whom apathy or prejudice may not prevent from thinking on the important question of the curability of certain diseases of the human ovary by operation; since their cure by other means is, by general admission, deemed hopeless.

But let me not be misunderstood. Let me not be supposed for a moment to recommend this operation as one to be undertaken in any but well-selected cases to which it is adapted; still less let me be supposed to advise that any

surgeon should engage in its performance who has not, by habits of operating—yet more by long habits of careful observation and treatment of disease generally—and by very considerate and studious examination of the nature and connexions of this particular disease, and the tendencies of the viscera, which may be involved in mischief by an ill-judged operation, or ill-conducted after-treatment—qualified himself to cope with difficulties from which it is unreasonable to expect an exemption.

Guilford Street, Russell Square,
Dec. 12, 1842.

ON MYOPIA.

By W. CLAY WALLACE, M.D.

New York.

(For the *London Medical Gazette*.)

[Concluded from p. 416.]

It is generally admitted, that, in its perfectly easy condition, the eye is adjusted only to distant objects, from the following facts:—1. An effort is necessary to look at near objects, and that effort, when long continued, becomes painful; whereas we can look

at distant objects without fatigue. 2. As age, which diminishes the tone of all the tissues, advances, the ability to see near objects becomes lessened, while distant objects can be seen as clearly as ever. 3. While under the relaxing power of belladonna, the eye loses the power of seeing near objects distinctly.

In order to adjust the eye to distant objects, all that is necessary to antagonise the power exerted by the ciliary body is, to cease the effort—to allow it to become to a greater or less extent relaxed, when the crystalline will be brawn backward by the elasticity of the

membranes intersecting the vitreous humour.

By the ciliary and vitreous arrangement the crystalline may be drawn, not only backward and forward, but also obliquely in any direction; and in this manner the external muscles may be aided to some extent. In type-compositors, who require an extended field of vision to facilitate their rapid movements, the pupil is often dilated; whereas in engravers, whose vision is confined to a point, it is almost always contracted.

The pupil contracts when we look at a near object, an effect which arises from simultaneous action of the iris with the ciliary body; and when the pupil is expanded by belladonna, the eye is adjusted to distant objects from the same cause.

Now, if we look at the iris in a concave mirror, or through a powerful lens, we find that the pupillary margin of the annulus minor, which is the principal seat of motion, resembles the apices of the ciliary processes; that the contractions take place only at this margin, and that the middle of the fibres of the iris do not increase in size, an effect which would take place if the membrane were muscular; just as the middle of the biceps, or any other universally acknowledged muscle, becomes larger by contraction. The orbicular fibres are merely connecting bands, and are, by the advocates of muscularity, shewn by maceration and putrefaction—a method which is certainly not adapted to exhibit muscles in other parts of the body, for by that very process they would be decomposed and dissolved. The more we compare the iris, the ciliary processes, and that membrane in birds which is called the marsupium, together, the more do we become convinced that they are similar textures. It is not necessary that vascular membranes, to become erect, should possess corpora cavernosa, as some of the advocates for muscularity insist; for that tubes become erect when distended may be easily shewn by experiment. It is no proof of the existence of an orbicular muscle, that the galvanic fluid applied to the iris causes the pupil to contract, for the impression of light is at the same time produced on the retina, and that impression is followed by the usual consequences. Any person may convince

himself of this by the often repeated experiment of placing a piece of zinc between the gum and the upper lip, and applying the end of a silver spoon to the eyelid, when a flash of light will be perceived whenever the metals come in contact.

As the motor nerves of the eye are principally derived from the third and from the fifth pair, whenever additional light falls on the retina, or an indistinct image is produced on the retina, the impression is thence conveyed to the brain; there follows a reflex affection of the motor nerves, which causes the pupil to contract, the ciliary body to adjust the focus, the external muscles to give the organ the necessary direction, the eyelids and eyebrows to be drawn together, and almost all the muscles of the face to be simultaneously affected. Whenever any part of the whole apparatus is deranged, the eye has an unmeaning stare, as may be observed in paralysis or amaurosis, or in some cases after the operation for squinting.

The simultaneous elongation of the fibres of the iris, and of the ciliary processes, is shewn by an experiment of Sir D. Brewster. "He took a piece of paper, and wrote upon it the three words—ON THE EYE. Having placed a fold of white paper behind the word THE, and two folds behind the word EYE, he fixed the piece of paper at one end of a square draw tube, and placed his eye at the other end, so that he could read all the words by the transmitted light of a candle held behind the paper. The word ON was most luminous; the word THE was less luminous; and the word EYE still less so. He now brought the paper as near his eye as he could, without interfering with the perfect distinctness of the word ON. When this was done, no exertion whatever could enable him to distinguish the word THE, and still less the word EYE. He then looked at them through a small aperture, but the indistinctness of the two last words was increased. When he made the words THE and EYE as luminous as the word ON, or when he brought another candle near the eye, so as to cause the pupil to contract still further, they could be seen distinctly."

Though acting often simultaneously, the offices of the iris and ciliary body are totally distinct. The one regulates

the admission of light into the organ, and the other regulates the focus. The pupil is often contracted or dilated without change of adjusting power; it is very often dilated in myopia, and it is almost always contracted in presbyopia, apparently by efforts of nature to remedy the defect; as the attempt at adjustment at the same time affects the iris, and a stimulus to the iris affects the adjusting organs, as may be inferred from Sir D. Brewster's experiment, and from the fact that a presbyope holds the object close to the light, in order to see more distinctly.

When, by any cause, the ciliary processes are preternaturally elongated, or the membranes of the vitreous humor have lost their elasticity, the individual becomes near-sighted; when, on the other hand, the ciliary processes are relaxed, far-sightedness is produced, provided the elasticity of the retracting membranes is retained.

That these are the most frequent causes of the complaints we are considering, is evident, from the structure, from the examination of patients, and from the effects of remedies; for it has been ascertained by Professor Tully that a presbyope can do without his spectacles when under the influence of strychnine, a remedy which produces powerful contractions of muscular fibres, whereas an opposite effect is produced by the relaxing powers of belladonna.

The ages of fifteen and forty-five are the periods of life at which vision is apt to be influenced by defective adjusting power. At fifteen there is an unusual fulness of the system; the voice becomes hoarse, the beard begins to grow, the menstrual fluid to appear, the mammae enlarge, and the sexual organs become turgid. The ciliary processes are occasionally over-distended, and draw the crystalline so far forward, that distant objects cannot be distinctly discerned without the aid of concave spectacles. This is the time at which myopia most frequently occurs, and the complaint is for the most confined to the over-indulged, while it is very seldom seen among the lower ranks of society.

Puberty is not the only period at which myopia occurs. "A gentleman who had found it necessary to use convex glasses at the age of forty, began when he was fifty to see distinct objects indistinctly, and was obliged to employ

a concave, number six, for distant sight, though he still used convex glasses of the first number for reading. A woman of fifty who had become presbyopic, was attacked with dimness of sight and slight inflammation of one eye, for which copious evacuations were necessary. On recovery she found herself near-sighted, and required concave-glasses of the fifth number for seeing distant objects. In a lady who had long been presbyopic, inflammation of the eyes occurred, requiring leeches and other means. When she got well she could read without her glasses; but the presbyopia returned in a few weeks." (Ware, as quoted by Lawrence.)

Although the ciliary processes be preternaturally elongated, it does not follow that they are deprived of a certain amount of relaxation. Most myopes can read small print at two different distances, and with a single lens of the proper concavity they can see distinctly at all distances; which could not be done without different lenses if the eye were deprived of adjusting power, as was probably the case in the instance already related, where the person was obliged to use a concave glass for viewing distant objects, and a slightly convex glass for reading.

Those who are engaged in occupations which require the long-continued employment of the eyes on minute objects are more apt to become near-sighted than those who are not thus employed. Mr. Lawrence attended a book-sale, and found that out of twenty-three persons who were present, twelve of the number wore glasses.

Like several other affections of the eye, myopia is sometimes hereditary; the children of short-sighted parents being more apt than others to be affected with the disease.

Treatment.—From what has been stated it will be seen, that the most frequent cause of myopia is either congestion of the ciliary processes, or relaxation of the membranes of the vitreous humour. It cannot, however, be denied, that the complaint is often produced by unusual convexity of the cornea, and that it may also be occasioned by unusual convexity of the crystalline. Should the complaint arise from any other cause than affection of the ciliary body, no benefit is

likely to be experienced from any other treatment than the use of concave spectacles; but as elongation of the ciliary processes is the most frequent cause, our endeavours should in that case be directed to diminish the congestion which occasions it. "If the *turgor vitalis* in the eye," says Weller, "be excited by congestion of blood, and the myopia be produced by this cause, it must be removed by well-known rules." Leeches have been recommended since the days of Bannister; but it must be remembered, that it is only at the commencement of near-sightedness that we may hope for benefit, and that it is not probable the least degree of amelioration will be effected by abstracting blood from a confirmed myope. If the lids be tender, as in myopia they often are, they will be improved by smearing them at bed-time with one of the usual ophthalmic ointments, or by washing them frequently with some mild astringent lotion. Particular attention should be paid to the conjunctiva in the treatment of many internal affections of the eye. As the conjunctiva is chiefly supplied by branches of the fifth pair, it follows that when parts of the extremities of a nerve are irritated, the root and the other branches proceeding from it become affected, and that the functions of the parts which those branches supply become more or less impaired.

As camphor, agnus casta, prussic acid, hyoscyamus, belladonna, conium maculatum, stramonium, &c. have the effect of diminishing erectility in other organs, their use is indicated in myopia. Iron is often prescribed to give a natural action to other erectile tissues, and it may have the effect of improving those which we are now considering, especially when accompanied with uterine disorder.

All minute occupations, such as sewing, long-continued reading, drawing, &c. should be abandoned; the head should be kept erect; the coverings of the neck should be loose; and straining of every kind should be avoided, to prevent increase of congestion. Mild unirritating diet, pure air, active exercise, and the practice of looking at distant objects in the open country, will be very beneficial.

The far-discerning eye of the Indian is well known; and it is asserted that

near-sightedness does not exist among the Arabs or Tartars, who are used to roam about, and to look at distant objects. The power also which sailors possess of seeing at great distances is only acquired by practice. An experienced "look-out man" can very soon descry the character and the nation of a distant sail, which, to an ordinary observer, might seem a mere speck on the ocean. Some of the exercises of a soldier increase the power of recognizing distant objects. "It was not unusual," says Reveillé Parise, "to observe that among the troops the sight of many near-sighted conscripts was restored." In the case of a boy born without arms, who possessed the power of writing, &c. with his toes, Dr. J. V. C. Smith relates that the point of distinct vision was so much lengthened, that the boy could not see an object at the usual focal distance so well as at his feet.

By the early application of concave glasses the crystalline is kept in a wrong position, and the efforts of nature to overcome the defect are prevented.

"Give," says Reveillé Parise, "a person with excellent sight a glass slightly concave, and he will at first see less distinctly than with the naked eye. He will, however, soon become so accustomed to its use, that it will not incommode, but even become indispensable to him. Gradually increase the concavity, and you shall see that the organ will change in a similar manner, so that an individual with good sight will, at the end of a few years, become affected with complete myopia, and will ultimately require glasses of the shortest focus."

"It is a law," says Dr. J. V. C. Smith, "and strange it is that its indications are not more observed, that the eye, at every period of life, will accommodate itself to the wants and necessities of the individual, provided it be not artificially deranged. Imperfect vision, the evils of near-sightedness, and the misfortune of not seeing distinctly in old age, were never heard of as being universal till opticians became numerous." "Near-sighted children are often kept in that state through life by being early furnished with concave spectacles. Withhold them altogether, and the eye would, in obedience to the laws of its organization, adapt itself to the labour required."

When glasses are considered indispensable, it is advisable to use those having the smallest concavity; and in making the selection, it is proper to observe that the curves are made from the same centre, and that the material is perfectly pure and transparent. As the space between the eyes and the size of the forehead is not precisely alike in two individuals, the frame should be made to fit the wearer, so that the centre of the glass may be opposite the pupil.

Myopia has been lately treated by the myopodiorthotikon of M. Berthold, an account of which has not yet reached this country.

A CASE OF THE RECOVERY OF SUSPENDED ANIMATION

AFTER FOURTEEN MINUTES' SUBMERSION
IN WATER.

BY H. G. DOUGLASS, M.D.

Physician to the Strangers' Hospital, Havre.

*(Being an extract from a letter to Dr. Todd,
and forwarded by him to the Medical
Gazette.)*

It is popularly believed, that after two or three minutes' submersion in the water life is extinct; and under this impression, means for resuscitation, if at all employed, are for a very limited time persisted in. Now, as to the measurement of time in such cases, it has always appeared to me very fallacious. No one ever takes out his watch to observe the moment when the person sinks in the water, although some one may look at it when he is taken out of it, but generally, the consternation and anxiety is so great that the duration of the submersion is a matter of guess or supposition with every bystander. In the case I am about to relate, I have taken the time from the average number of minutes it required, on repeated trials by different persons, after the accident, to run from the spot where it occurred to the different places the messengers ran to in search of grappling irons to pull him up by before they were procured. This time varied from twelve to fourteen minutes; and I should think the latter might fairly be allowed as comprising the whole time between the immersion and his being dragged up by the grappling

iron, which caught him by the waistband of his trousers.

The subject of this case, John Wilson, a seaman belonging to the Duchess of Orleans packet-ship, from New York to Havre, returning on board his vessel, which occupied a stage berth (that is, an inclined plane of perhaps 25 degrees, formed of planks, supported by cross spars, stretching from the quay to the ship, for the purpose of landing cargo by) in a state of intoxication fell over the side into the dock, where the water was from twelve to sixteen feet deep. It being Sunday, there were few sailors about the place. Some stragglers saw the accident, and gave the alarm. Two sailors, who had *not* perceived it, jumped in at hazard, but were unsuccessful in finding him, owing, as it appeared afterwards, to his having sunk into the mud. A man was then sent to seek at one of the guard-houses for a grappling iron; he was unsuccessful at the two first places, but succeeded at another, and Wilson was hauled up in the manner I have described. It was evident, from the appearance of the head and the superior extremities, that he had sunk into the mud. He was carried to the guard-house nearly opposite the vessel, and from thence he was conveyed, on a stretcher, to the Strangers' Hospital, a distance of half a mile at least from the dock. On his being brought in, at 10 minutes past 3 P.M., I directed him to be stripped and laid on a bed. *There was not the slightest appearance of animation.* Whilst water was being made hot, and bags of hot salt got ready, I desired four of the men to commence rubbing the body with dry flannel cloths. The hospital having been then very recently established, and at such a distance from the Docks, we were unprovided with any apparatus for the recovery of suspended animation. These four men were relieved every half hour by four of their shipmates, and constant friction was thus kept up. Bags of hot sand placed round the body, and lavements of hot water, to which was subsequently added, Spt. Terebinth. and Tinct. of Assafœtida, formed the whole treatment. Inflation of the lungs was tried, but not persisted in, it not appearing to be attended with effect, and interfering with the rubbing, on which I placed great dependence. I was frequently on the point of abandoning all

hope, but I saw, or thought I saw, slight convulsive twitchings in the right inferior eyelid and around the mouth, similar to those caused by weak galvanic shocks on muscular fibre. This, perhaps idea, animated me. The relays worked on well, and at a quarter past 11 at night, we were amply repaid in seeing respiration, eight hours and a half from the time of immersion, though extremely feeble, established: before 12 o'clock he swallowed a tea-spoonful of warm brandy and water. It required, for some time, great care to keep up the feeble spark that animated the frame, but it was two days before intelligence was restored: within 24 hours reaction set in so violently, that I was obliged to order four leeches to each temple, and to take six ounces of blood from the arm. It was well blood was abstracted so cautiously, for the pulse suddenly fell, and became almost imperceptible, the respiration becoming greatly hurried; stimulants were immediately had recourse to, with effect. Typhoid symptoms supervened, which we had to combat for six weeks. It unfortunately happened, that one of his ship-mates placed a hot sand bag in contact with his right side, and caused a severe eschar, extending from the axilla nearly to the spinous process of the ilium: this was a source of severe suffering to the poor fellow, and considerably retarded his cure: the intercostals on that side acted imperfectly, and caused great pain, and he had in addition to all to contend against pulmonary congestion: however, at the expiration of four months, he was discharged cured, from the hospital; and a short time ago came to see me on his return from New York.

He stated, whilst in the hospital, that the first sensation he could refer to was the sense of heat in the intestines; I suppose from the lavement containing the turpentine and assafœtida.

I am aware that this is not a solitary although it be a rare case; and that examples are given by Desgranges and Foderi of recovery after fifteen minutes' immersion. Still, I have no doubt my narrative will be received with interest, as an additional instance of what may be done by the persevering use of those means which science suggests in such cases.

Note by Dr. Todd.—Electricity should always be employed in cases of sus-

pended animation. If brought to bear upon the medulla oblongata, it will frequently succeed in exciting the respiratory acts, when other means have failed. Perhaps the most convenient method of using it is by means of the electro-dynamic machine, by placing one wire at the back of the neck high up, and the others at the diaphragm. It was employed with marked advantage in a case which occurred lately at the King's College Hospital. An infant, a few months old, got some tincture of opium by mistake; she was brought into the hospital almost lifeless; the respiration even failed to such a degree, that for two minutes she did not breathe once. Mr. Russell, and Mr. Johnson, the resident medical officers, applied electricity in the manner above described. The first and immediate effect was to excite the respiration, and soon afterwards the whole spinal cord became affected, so that at each passage of the electric current the limbs were raised convulsively. Respiration was completely re-established by these means, but the child died several hours afterwards with congested lungs.

UTERINE HÆMORRHAGE.

To the Editor of the Medical Gazette.

SIR,

SHOULD the accompanying remarks and observations upon the treatment of uterine hæmorrhage be deemed worthy of a corner in the *MEDICAL GAZETTE*, will you do me the favour to have them inserted.

Your obedient servant,

WM. PRETTY,
Surgeon.

Great College Street,
Camden Town, Dec. 15, 1842.

It has afforded me much pleasure and satisfaction to read of the beneficial results of pressure made upon the aorta by manual exertion in cases of uterine hæmorrhage, as reported by Mr. Brown in the *MEDICAL GAZETTE* for Dec. 2. In one case the good effects were very decided, after all other usual means had been resorted to unsuccessfully. Mr. Brown expresses his surprise that so important a measure is not more general, as the principle is acknowledged in the most trifling surgical operation. As Mr. B. has shewn its practicability, let us hope

that it will not go untried by accoucheurs in future.

If Mr. Brown will refer to some observations on the treatment of uterine hæmorrhage, inserted in this journal for June 25, 1841, he will there find the possibility of arresting the flow of blood through the aorta alluded to as capable of being effected by mechanical means—the use of a firm compress and tourniquets, as suggested, and I believe practised, by the late Mr. Walford. If I have not been deceived in my experience of these means, I should say that uterine hæmorrhage after childbirth is perfectly capable of control by them. We have been long accustomed to place too much reliance upon manual pressure and the use of bandages. Now the latter, so generally recommended, and very necessary, do very little more than give support to the abdominal parietes and their contained viscera; the former, though expended upon the uterus chiefly, is nevertheless often ineffectual in stopping the flow of blood, besides being tiresome and laborious to the practitioner. The following case will exhibit these facts.

About a month since my proximity to a patient of a gentleman residing near Finsbury Square led to my opinion being asked as to the propriety of expediting delivery under the following circumstances:—A lady, who had previously passed through two labours, which were perfectly natural in every respect, and unattended with any untoward occurrence, had been in slow labour for twelve hours. The liquor amnii had been discharged at the commencement; the os uteri was considerably dilated, and very dilatable; the feet the presenting parts; the funis down, and void of pulsation. We agreed to bring down the feet, and gradually forward the labour. Pains increased in frequency and power, and the delivery was in due time effected. Prior to the expulsion of the head there was one gush of blood, which induced us to think we should probably have to contend with flooding. The placenta was thrown off, and easily removed from the vagina with a few small coagula. Blood gushed out at intervals in considerable quantity, and a draining continued in spite of our exertions to stay it. The uterus had contracted to its usual size after delivery, and I most

assiduously applied pressure with my hands, had the body surrounded with a bandage, while my medical coadjutor used cloths wetted in cold vinegar and water, plunged the hands into the same, and admitted a free current of air into the apartment. Notwithstanding these means, and the exhibition of some brandy and water, fainting ensued, and the patient vomited once, or rather retched for a few minutes. Feeling much exhausted and alarmed for her own safety, she requested to see her husband. We considered her state as one of great danger. I ran out of the house, and was fortunate in obtaining from a neighbour's amputating case a tourniquet and an extra strap. I wrapped up a small thick book in a napkin, placed it over the uterus, encircled the hips, having previously connected the two straps by means of the buckle, and fixed the tourniquet immediately over the book; the pad, not having been removed, being on one side of it. Two or three turns of the screw produced such an amount of pressure as to cause the expression of some pain from our patient; but it was only for the moment. The slow draining which had been going on up to this time was quickly stopped, and all symptoms of faintness gradually disappeared. In half an hour's time the patient wished for a change of posture. She was turned on her other side without the slightest inconvenience; no return of fainting, no reappearance of hæmorrhage, no alteration in the position of the compress and tourniquet. The Doctor was satisfied, and I believe agreeably surprised, at the effect produced by this method of applying pressure. The facility of obtaining, and the simplicity of the means, strongly recommend their trial.

The principle of external pressure is, I feel assured, the best to act upon in the management of cases of hæmorrhage after delivery, though the way of applying pressure may vary. I know of none superior to that I have just described; but to have the power fully developed, the tourniquet and band should be of double the ordinary size. One gentleman, I am informed, is in the habit of using a saddle-girth, which, with a firm compress, I should think would prove serviceable. An intelligent student, upon mentioning the use of the tourniquet and compress

to his obstetric teacher, in cases of flooding, was answered by, "he did not see much in it." If that gentleman will deign to make use of them, I doubt not but he will obtain great additional security to his patients by so doing.

In allusion to a fatal case of placental presentation inserted in the *Lancet* for August 16th, 1842, Mr. Craig recommended, in cases of extreme depression after childbirth, from one to two drachms of laudanum in a wine-glass full of undiluted spirit, and the latter repeated several times in quick succession, whether accompanied with hæmorrhage or otherwise. (*Vide Lancet*, Dec. 26th.) I will here only remark that the propriety of administering drachm doses of laudanum, or even small doses in conjunction with the spirit, will be questioned by many medical men, where the indication is to support the all but exhausted powers of life, and to give contractile energy to the uterine fibre. The fatal case of placental presentation appears to have been treated with skill and judgment, and the cause of death to have been exhaustion from the loss of blood. It is somewhat remarkable that the patient should have spoken so cheerfully to her friends, and should have appeared in so satisfactory a state to her medical attendants, for twenty minutes after delivery, and that the fatal faintness and exhaustion should ensue, without the recurrence of hæmorrhage. May I be pardoned, if I ask, in trying to find out a cause for this rather unexpected change, if it were not possible for internal hæmorrhage to have occurred, though small in quantity, yet sufficiently great to turn the scale against the patient, whose countenance at the first visit was exsanguine, without the usual external appearances? The state of the uterus and vagina, as regards coagula, does not appear to have been ascertained by a post-mortem examination. Whether hæmorrhage did or did not again take place, I beg to be allowed to say that in the management of similar cases some good may follow the application of pressure over the uterus or upon the aorta, in a way much more certain and effectual than that obtained by surrounding the body with a bandage, such as is generally furnished by the lying-in room, and my object in this communication is to request my

professional brethren will give a trial to the tourniquet and compress as an easy means of effecting powerful and steady pressure to the arresting of uterine hæmorrhage after child-birth: and this without excluding the recommendations of Mr. Craig, or the plan adopted by Mr. Brown, if thought advisable.

OBSERVATIONS ON SEMINAL AND OTHER DISCHARGES FROM THE URETHRA.

WITH ILLUSTRATIVE CASES.

BY BENJAMIN PHILLIPS, F.R.S.

Surgeon to St. Marylebone Infirmary, and Lecturer
on Surgery at the Westminster Hospital
School of Medicine.

(*For the London Medical Gazette.*)

It is now eleven years since first I applied lunar caustic upon the mucous membrane of the urethra, for the purpose of removing a tendency to frequent involuntary discharges of spermatic fluid. I adopted the plan in consequence of suggestions made by M. Lallemand in his "*Observations on the Diseases of the Genito-Urinary Organs*," and I have much satisfaction in stating that my own experience goes far in confirming the accuracy of many of the views of those affections, contained in his subsequent work. I should have been much disposed to let the system of which that accomplished surgeon is the author, make its way by the influence of his own pen, but I know opinions expressed in a foreign language are comparatively little read, and that full confidence is not always given to the facts which are recorded, and therefore it is that I have for some time intended to communicate to the profession the results of my own experience of the efficiency of the lunar caustic, as a remedial agent in many distressing cases of involuntary seminal discharges. It is probable, however, that I might have still further delayed the communication, had I not been pressed to make known the facts by some of my professional brethren, with whom I had seen several of the cases upon which my experience is founded. I conclude that what is interesting to a few to whom some of the cases are known, will be not less interesting to others to whom they are not known,

and therefore it is that I now give them to the profession; in the hope that when confidence in the plan of treatment becomes more widely spread, some effort will be made to rescue this very distressing class of cases from the fangs of those harpies whose dens are daily advertised in the public papers; and who, for the most part, by the exhibition of tonics and balsams, keep up the hopes of their patients so long as their money lasts, when their desire to be useful ceases also. In this way the case is again thrown back upon the regular practitioner, with some other disease, pulmonary or other, superadded to, and arising out of, their inability to cure the first.

Spermatic discharges are voluntary or involuntary: with the first we have nothing to do here; with the second alone we propose to occupy ourselves in the present communication.

Involuntary discharges are for the most part, if not altogether, caused by irritation set up in or about the ducts connected with the testicle. In some cases it may be doubtful whether the irritation by which they are excited may not have its seat in the rectum, as in Case 6; primarily there is no doubt it may, but Case 5 would lead to the supposition that secondarily the mucous membrane of the urethra itself may suffer, and that, when the irritation in the rectum has ceased, that of the urethra may still keep up the mischief.

There are particular modes in which the urethral irritation is commonly excited; among these masturbation holds a prominent place: by this practice, the constant excitement of the seminal ducts ends by establishing a permanent irritation there: it may likewise happen from excess in sexual intercourse, as in Case 2. Next to this cause we may range gonorrhœa or gleet discharges, which, from time to time, establish chronic inflammation in the vicinity of the orifices of the ejaculatory ducts. Then follows stricture, which by opposing an obstacle to the free passage of urine, ultimately causes the development of a morbid condition of the mucous membrane between the stricture and the bladder, as in Case 7. The same state of these organs may result from irritation within the rectum; that irritation may be caused by fissures or piles, or by the presence of ascarides, as in Cases 5 and 6.

It is said that other causes are capable of inducing the same disordered action of the sexual organs, but as I profess in this place merely to point out such as have come within my own observation, I do not propose to consider others.

The mode in which the irritation, once set up around the orifices of the ejaculatory ducts, acts, is very much the same as obtains upon the application of irritation to the mouths of other ducts; it solicits increased action in the organ with which they communicate. Irritate the bladder, and the kidneys are stimulated to increased action; irritate the conjunctiva, and the lachrymal secretion increases; irritate the duodenum, and it is said bile will be supplied in increased quantity; it is unnecessary to carry the illustration further.

How does masturbation induce this irritation? Within moderate limits it would not do so; but if you give any canal too much to do, you will ultimately develope irritation in it, more especially at its orifice. If urine be passed too often, in cystitis for instance, the orifice of the urethra becomes red, and the same thing happens to other conduits: it is in this way that masturbation or sexual excesses may develope irritation at the mouths of the ejaculatory ducts: it is in that way increased secretion is determined in the testicle; and thus involuntary discharges, consequences of masturbation or excesses, are explained.

It is easy to explain how gonorrhœal discharges may induce a similar state of things: in many cases, and especially when the discharge is obstinate, the inflammation upon which it depends is extended backwards until it reaches the neighbourhood of the prostate; where it may excite, on the one hand, the kidney, on the other the prostate, and on the third the testicle, inducing each of those organs to furnish more than its accustomed supply. That the inflammatory action under those circumstances is likely to fix itself there, is shewn in two ways—the existence of stricture so commonly near that region, and the acute pain experienced beyond the curvature when a bougie is passed. Often the inflammation may extend to the bladder itself. Often it passes along the spermatic ducts to the testicle.

When involuntary spermatic dis-

charges are caused by stricture of the urethra, the immediate exciting cause is the same as when they are consequences of other circumstances; irritation of the mouths of the ejaculatory ducts. The irritation is then caused by the obstacle to the passage of the urine, and a state of chronic inflammation may be developed along the mucous membrane from the stricture to the neck of the bladder, and may even extend into that organ, or along the ejaculatory ducts, as in Case 7.

Irritation within the rectum, when long continued, may extend to the sexual organs, and occasion the discharges which we are considering. Cases 5 and 6 are illustrative of this fact. In some cases the source of irritation of the sexual organs may continue to be confined to the rectum, and when that ceases the spermatic trouble may also cease, as in Case 6; but in other instances the spermatic disturbance may persist after the irritation of the rectum is cured, as in Case 5. There is no difficulty in accounting for this circumstance; the irritation, originally anal, has ultimately become urethral also, and will only yield to treatment directly applied to that part.

Every experienced surgeon has had ample opportunities of observing the intimate sympathy which exists between the bladder and the urethra, and the rectum. How an irritable bladder may make an irritable rectum; how piles, or other affection of the rectum, will occasion trouble in the bladder; how the application of caustic within the urethra will now and then induce spasm of the rectum; how, in the efforts made to empty the bladder, in many cases of stricture, a corresponding effort will be made by the rectum; it may not always be easy to explain, but they are facts commonly observed.

In most cases the evidence of involuntary spermatic discharges is clear enough, but the time comes when the ejaculation is unaccompanied by the ordinary sensations, and the patient may then be unaware of the extent of the evil. I have again and again known cases where the spermatic fluid passed with the urine; others, in which the effort at stool caused a pressure to be made upon the distended seminal vesicles, and thus their contents were squeezed out: but the fluid may not pass until the process of buttoning up

is going on, and the evil may be undiscovered. Still, unless the disorder be very advanced, in most cases the person himself is aware of it when it passes with the urine, because it almost always passes with the last drops, and can then be detected, and because a certain sensation is experienced about the neck of the bladder. But when the medical man is consulted, he calls for the recently passed urine, or requests that it may be passed in his presence, and at the bottom of the vessel he perceives small granular diaphanous particles; and they are seen floating even before the urine cools: if the evil be however very advanced, no peculiar sensation is experienced, and the granular matter may be undetected, and may assume a more uniform cloudy appearance. In cases where uncertainty remains with regard to the deposit, we may advantageously have recourse to the microscope, by means of which the little long-tailed animalcules of the spermatic fluid can readily be perceived. Under any debilitating causes, whether those causes be found in frequent spermatic discharges, disease, or old age, the fluid becomes much thinner, and the animalcules much less numerous, and they may be almost, if not altogether, wanting.

One of the general symptoms resulting from too frequent spermatic discharges, which is most distressing to the sufferer, is a state approaching to, if not at the time, actual impotency. It is not that the seminal fluid, though deteriorated, is incapable of determining fecundation, but it is that the organs are wanting in the energy necessary for projecting the fluid into the uterus; the erection of the penis, if it exist at all, being only momentary. The digestive functions become deranged; the bowels constipated; nutrition languishes; respiration is troubled; the voice fails; the heart's action is interfered with, even to such an extent as to induce the belief of actual disease in that organ, as in Case 1, and hypochondriasis becomes complete. These things do not advance far without causing trouble in the nervous system, manifested by some perturbation of the senses, by headache, with great sense of weight or pressure, and they are accompanied by loss of memory; a timidity and apprehension which are very painful.

It must be evident to any one who takes the trouble to reflect on these things, that as the causes of these discharges are many, the treatment must also be variable. When the irritation is in the rectum, the case will require a very different course of treatment to one proceeding from stricture of the urethra. We will therefore make such general remarks as are proper with reference to the treatment of the several varieties of the affection which we have considered. First, when the cause is masturbation, or sexual excess:—the causes here are voluntary; the cure must also be voluntary. Lunar caustic will be powerless unless the patient has sufficient determination to abstain from the practice. But in many cases perfect abstinence will not suffice to put an end to the mischief; the *voluntary* discharges are got rid of, but they were persisted in so long that a permanent irritation has been set up in the verumontanum, and that irritation may, as we have already explained, excite equally injurious *involuntary* discharges: and here a remedy must be found by the surgeon. The first thing we have to do is to introduce cautiously a bougie, to pass it down towards the bladder; but before it arrives there, the patient will complain of pain, which is sometimes very acute; and the point at which the bougie has then arrived is usually a little in front of the prostate. The surgeon must then carefully observe how far the penis has been extended, and a mark must be made upon the bougie to indicate the depth to which the instrument has penetrated, because that is the point upon which the lunar caustic must be applied. The depth to which we must penetrate must be marked upon the caustic instrument, which is then introduced and gently passed to the proper point, when the caustic is uncovered and the membrane brushed over: as soon as that has been done, the caustic is again covered, and the instrument is withdrawn. In some cases the patient complains of a little heat when the caustic is applied; in others, the sensation spoken of is a coldness. I have more than once known some discomfort almost amounting to spasm at the anus, but altogether it is astonishing how rarely any complaint is made. At the next time of passing the urine, some smarting is

usually experienced; it may continue through the day, but it is very bearable. In all cases it occasions a discharge, which is sometimes considerable, and at first is thin and watery, but gradually becomes thicker, and in the course of a few days ceases. In a few cases the discharge is at first streaked with blood; and in a few rare instances there may be trifling hæmorrhage.

In most instances a feeling of improvement is early manifest, but the complete effect of the remedy cannot be estimated until the irritation has entirely subsided. Indeed, the amendment is almost always progressive, and frequently it happens, that when, by the end of the second or third week, not much benefit has been, apparently, derived, we are astonished by the change which has been brought about in another fortnight. If by the end of six weeks from the first application a very decided amendment, or a cure, be not produced, we may conclude either that an insufficient application of caustic has been made, or that the fatal habit is still persisted in. It has more than once happened to me to apply too little, but I have never had to accuse myself of applying too much. In any case a second application is indicated when the desired effect is not obtained from the first. More than two applications I have never had occasion to make; but I can easily conceive that circumstances might render a further recourse to the remedy proper.

How the lunar caustic acts in extinguishing the morbid sensibility of mucous surfaces I cannot tell, but of its virtues in this respect few surgeons can be ignorant. Every day we apply it to modify the painful irritability of ulcers, as well as that of certain affections of mucous membranes.

If the affection has been caused by a gonorrhœal or gleet discharge, the treatment must be the same as in the former instance.

If it has been caused by stricture, we must first restore the canal to its natural diameter; and it may be that the morbid state of the mucous membrane behind the stricture will gradually improve when the obstacle to the passage of the urine is removed, and that with the cessation of that morbid state may also cease those spermatic discharges which have been caused by it. But this

conclusion is not inevitable; the obstacle to the passage of the urine may be removed, but the morbid condition of the posterior part of the canal, which has resulted from it, may persist: so may the specific discharges. Then the efficacy of the lunar caustic can be at once demonstrated; and a single proper and sufficient application of the remedy, with the precautions already indicated, will, in most cases, promptly cure the disease of the urethra as well as that of the spermatic organs.

If the discharges be determined by irritation of the anus, or the rectum, appropriate means must be used to cure the intestinal disorder; and it may be that when that has ceased the spermatic disorder will also cease, as in Case 6. But, as in Case 5, it may persist, because a distinct irritation may have been determined in the urethra by the long-continued action of that of the intestinal canal; and to dissipate that, recourse must be had to the lunar caustic, under the same restrictions as have been already pointed out.

Such is a general view of this very distressing class of diseases—and, as I think, the appropriate remedy—and the illustrative cases will follow. How many cases I have treated in the last eleven years I cannot exactly say. I have notes of twenty-five cases, but they have all been treated within the last five years. At first, I had intended to detail the whole, but as their general features are a good deal alike, I have preferred giving a few which sufficiently clearly represent the class, and will save the time of the reader.

CASE I.—H. J., æt. 22, applied to me under the following circumstances:—he had had, for some time, a good deal of trouble about his heart; his stomach did not properly perform its functions; his bowels were irregular, and he had lost flesh and strength. At times, he had considerable cerebral excitability, when he could not bear the slightest noise without much distress. He had been under treatment for these complaints; had, at different times, applied various means of counter-irritation in the region of the heart, and, for a long time, had used only farinaceous food. Under this plan of treatment some of his symptoms had been relieved, but others had been aggravated, and his strength still further declined. After examining the heart, which afforded no evidence of any thing beyond functional disturbance, I was struck with the apparent langnor, the downcast, unquiet

look, and hypochondriacal expression of the patient, and my suspicion was at once awakened as to the cause of this state of things. I requested his mother, who accompanied him, to leave the room; when I told him at once that the cause of his present discomfort was the abuse of his sexual organs. At first he hesitated, but only for a moment, and then admitted that to a certain extent my impression was correct. When further pressed, he said that, living in the country, and being a good deal alone, about four years before he began to addict himself to masturbation; that the habit soon took such firm hold of him that scarcely a day occurred in which he did not recur to it at least twice; that the emission, after a time, took place with incomplete erection; and that at the time he consulted me he could not hold an ordinary conversation with a young woman without a continuous discharge of spermatic fluid. The consequences which soon followed the indulgence of this habit were, first, obstinate constipation, then stomach derangement, lassitude, and very distressing palpitation of the heart, with profound hypochondriasis. Several medical men were consulted, and the treatment to which I have already referred was employed. After a long persistence in this plan of treatment, suspicion was awakened in the mind of the attendant as to the possibility of the symptoms being produced by disturbance of the sexual organs. He was interrogated on this point, and a slight admission was made by the patient. He was then cautioned as to the consequences of such a habit, and it was suggested to him to "go with women." Into the question of the morality of this advice I need not enter, but in other respects the advice was not prudent. It is almost certain that in the state of the sexual organs induced by excessive masturbation, erection would be incomplete, emission almost immediate, and connexion impracticable; mental depression would be increased, and disgust of life more decided. The advice, however, was followed in this case, and, for the first time in his life, he proceeded to the haunts of infamy. Connexion was attempted, but without success; and after resorting to those places five or six times, he abandoned them "quite tired of life." I assured him that all his sufferings were owing to his indulgence in this baneful habit; and that if he persisted in it, they would be further aggravated; that the first object was to refrain from the practice, and that this depended entirely upon himself; that even if he could carry his resolution into effect, it was very likely that involuntarily, in some shape or other, the discharge might for some time continue. I directed him to try his resolution for a month, and to let me see him at the end of that time. When he came again, he said he had abstained

entirely, but that matters were not much better; that nine times, during the night, there had been involuntary discharges; that on two occasions they had happened during the time he was speaking to women; and that several times there had been involuntary discharges during straining at stool.

I now examined the sexual organs, which were extremely lax, the structure of the penis offering no feeling of elasticity when pressed between the fingers, and the scrotum almost as thin as a piece of linen cloth; the testicles hanging very low. Upon proceeding to examine the urethra, the same cowardly dread of pain which is common in people with those habits was strongly shown. A bougie was carefully passed for the purpose of ascertaining whether exaggerated sensibility was present at any part of the canal: on arriving some distance beyond the curvature, he regularly screamed out, and the instrument was quietly withdrawn. I now determined to blunt the sensibility at this point by applying upon it lunar caustic; this was done on the following day. That day week I saw him again; his spirits were much improved; a more complete erection of the penis than had been known for upwards of a year had occurred on the morning he saw me; and with the exception of the fifth night no emission had taken place. There was a slight mucous discharge, and there had been smarting when the urine passed, for a couple of days after the application of the caustic, but it was rapidly lessening. In three weeks afterwards I heard from him again, but did not see him: there had been two more discharges during the night, but he was sensible of increasing energy of the sexual organs. The impression on my mind was, that a second application of the nitrate would be necessary in this case, more especially because I was rather more chary of the caustic in this case than usual, from an apprehension that, from his great morbid excitability, there might be some after trouble; however, there was none; and as I have not again heard from him, it is fair to suppose all has gone on well.

[To be continued.]

MEDICAL GAZETTE.

Friday, December 16, 1842.

"Licet omnibus, licet etiam mihi, dignitatem Artis Medicæ tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

DISCOVERIES IN MEDICINE.

EVERY great discovery which inculcates a new principle and recommends a new practice, has, what an amusing

writer, treating of the Anti-slavery question in America, calls its "martyr age"—a time, that is, of persecution. when its first promulgators are subjected to ridicule and contempt, or to more serious resistance, according as the times in which they live, and the tempers of those with whom they are in contact, favour the one or the other mode of opposition.

All who have watched animals nursing their young must have observed how the love of offspring arouses their combativeness, and makes them dangerous to approach; and the originators of systems have often, for a certain time, a similar parental fondness for their progeny, and a fierceness wholly foreign to their natural temper. This combativeness protects the fondling from the assaults of its natural enemies, and enables the parent to resist determinedly, and to endure cheerfully, whatever the rough world imposes on him, till the object of his care becomes robust enough to make its own way. But alimementiveness and love of approbation, though their action be suspended, are not destroyed, and a few savory morsels and fond caresses are seldom refused if discreetly offered. By degrees the young stranger may be approached, seen, and even handled. But now a fresh danger awaits it—not from its enemies, but its friends, who are apt to crowd round it and stifle it.

In like manner a new doctrine in any science, or a new appliance in any art, has to endure first the dangers of opposition, and afterwards those of premature popularity: it is first abused—then overrated;—if it survive both these, it becomes gradually established and strengthened, and at length takes its place in the general economy, and is propagated by its own inherent vitality. Many of us remember the martyr age of auscultation in this country, the ridicule which attached at our different hospitals to the few believers as they

pursued their lonely way through the wards, or lingered over the bed of a single patient while the other medical officers and their trains swept by.

Sometimes a physician would condescend to listen to a râle or a rhonchus represented as remarkably distinct and beautiful; then the auscultator having patiently rectified his unskilful attempts to hold the instrument, stood by in anxious suspense, lest that awkwardness, or the talking, should mar the effect, and lose him an illustrious convert.

Then, what exultation when a post-mortem examination found wanting something which had been affirmed to be present, or something present which had not been dreamt of in the new philosophy!

Now this persecution, which all new theories involving a change of practice are liable to bring upon their first followers, has no doubt a very valuable effect in the social economy; it keeps the ranks of the new disciples from being swelled, and their energies impeded, by a crowd of the half-believing and indifferent, and this at a time when vigour and concentration are of the greatest importance to the cause; when the smaller the end of the wedge, and the firmer the material, the greater chance of its penetrating, and ultimately rending asunder, the resistance which it encounters: it is also sometimes serviceable to the inventors, and to the invention, by forcing them to a careful revision of their opinions, and a rejection of every argument which, though it might win approbation from friendly and even indifferent persons, yet would not have force enough to convince opponents. Discoveries and systems which oppose existing habits, prejudices, and interests, must undergo the test of almost universal opposition before their value be admitted. Nothing but sterling merit, tried and approved, can procure their general adoption, or

render their letters-patent productive to the inventor, whether in pence or praise. But a discoverer or a system may be in advance of the age; most undoubtedly they may, and sometimes are; but such discoverers, if they have a little patience, will soon see the age overtake them.

All who have fancied themselves, or been placed by their immediate followers, in the dignified position of those master spirits who lived and wrought for posterity, must, if they have cultivated the habit of self-examination, have observed the lamentable and humiliating tendency of personal feeling to enter in and to alloy the purity of their motives. "Only by pride cometh contrition," saith the wise man: but how seldom does argument fail to lead to strife. With this acknowledged infirmity of our nature before us, there is one point which those who are opposing the current of public opinion on the present views and habits of the profession would do well not to lose sight of, and that is, never to use, or allow to be used, unworthy means in promoting their views or in gaining adherents. Such practices damage self-esteem, often the only remaining high principle which sustains us from within, when we have lost all support from without, while the detection of them calls down personal contempt, and a degree of bitterness and indignation towards the individuals who practise them, which often extends itself most wrongfully to the cause which they advocate. We express our belief, that unworthy acts, like the undignified complaints mentioned above, do not originate with the great founders of systems, but with their injudicious followers. "Save me from my friends!"

A few words to those who conscientiously believe that they are guarding the avenues to error in our own

science. Let them beware of intemperate language, and the attributing unworthy motives to their opponents. There are so many good reasons why a wise man should not adopt all the opinions presented to his notice, that he should be much on his guard lest the importunity of those who advance them should lead to an impatient manner of rejection. This will give a seeming if not a real advantage to his antagonist, who will naturally accuse him of meeting reasons with reproaches, for want of more legitimate weapons of defence.

The public generally become spectators, if not arrayed as partisans, in attacks on what is old, or advocacy of what is new, in a profession which so nearly concerns their personal well-being as that of medicine. Few of us have not been repeatedly questioned about homœopathy and the water-cure; and although the questioners may be profoundly ignorant of the merits of the various cases which they relate to us as wonderful cures, and wholly unable to appreciate our reasons for caution in admitting them to have been such, yet they may be quite capable of detecting an inconsequence in our arguments, or want of taste or of temper in our strictures. Considering the nature of our art, and the complicated subjects on which it is exerted, we may well congratulate ourselves on the large quantity of truth and certainty that we can calculate on in practice; but we are forced to adopt many expedients for which we can render no very good reasons, and to reject many suggestions which reason may strongly advocate. The great majority of practitioners, and certainly the best, have no desire to make the art or the science of medicine a mystery; but so long as art remains long in proportion to life, so long will the division of labour require much time to be spent in ac-

quiring what shall make very little show in communicating, and so long must we be contented to leave many things unexplained, even at the risk of being thought unable to explain them. But the judgment, the manner, the taste, with which we convey our arguments, or our apologies, of these all are judges, and there is no more painful exhibition than that of a good cause suffering in the hands of a bad advocacy. This subject naturally suggests the great disadvantage under which those labour who have neglected to lay a solid foundation for their professional knowledge, and to clothe their ideas with such language as marks the general education of a gentleman. A peasant, or an artizan, while eagerly pleading the merits or recounting the effects of some system in which he believes, will command such attention from the novelty of his subject, and the earnestness of his manner, as shall cause his defects of language to be unheeded; but a professional man, as often as he offends against grammar, pronunciation, or the like, diverts the attention of his hearers, if they be educated men, from the merits of his arguments, by raising a smile at his mistake; and it may be, by a speculation on the ignorance which caused it.

Right or wrong, the education of the higher classes in this country is founded on a supposed acquaintance with the ancient languages, and through them, or with them, with the structure of language in general. Any evident deficiency, therefore, in this knowledge, betrayed in a vulgar or ungrammatical mode of expression, cuts a man off, in a degree, from the fellowship and from the prepossessions of those classes. This may not signify to the individual, but it does to the profession he follows, and the cause he advocates. It is true this is an age of transition, when learning, so apt to be clannish and exclusive,

is yielding the chief place in public estimation to science—so inclusive, extensive, and missionary in its tendencies, and when the professors of medicine invite the enlightened public not to the discussion of classical morceaux and the interchange of apt and recondite quotations, the chief value of which to the few is that they are *caviare* to the general, but to the observation of microscopic objects, which all good eyes may see, and of stethoscopic sounds, which all good ears may hear; yet they, who have seen most and heard most, may well claim credit for skill in diagnosis and treatment: these are sounder and better qualifications for professional character, than the subtle detection of a transcriber's error, or an ear shrinkingly sensitive to a false quantity; yet we should take some heed not to justify an impression that we are unequal to the difficulties of conversational prosody, or indifferent to the proper position of our aspirates, lest the more educated of our guests be tempted to scoff at our blunders.

To all ill-timed and ill-natured remarks on the deficiencies of medical science, we have a fair and ready answer: we candidly confess its imperfections, which we lament more as we know them better than other people, but we have facts and figures to shew that its improvement is progressive—that while we are bound to teach our pupils all that we know ourselves, we hope and believe they will one day know more than we do—that in practising our art we cannot afford to lose the benefit of any facts, from whatever source they may be produced, nor to be distracted by any theories, however brilliant they may appear, till they point to obvious results.

As an argument for temper, prudence, and candour, in *our dealing with* and *our speaking of* new and startling doctrines, it may be suggested that a

new system is not necessarily the enemy of science: we should do well, therefore, to strengthen our own positions to the utmost, and maintain an armed and dignified peace, as with a power which may one day be our ally, though it appear at first to be hostile, its pretensions exaggerated, and its terms exorbitant.

ROYAL MEDICAL & CHIRURGICAL SOCIETY.

The PRESIDENT in the Chair.

Dec. 13th, 1842.

A Report of some cases of Lithotomy, with Observations on Cheselden's last and most successful method of operating. By CHARLES MAYO, Senior Surgeon to the County Hospital at Winchester. (In a letter to E. Stanley, Esq., F.R.S.)

THE object of the author in this communication is to recommend for general adoption a method of operating which he believes to be that most approved by Cheselden, but upon which question there appears to have been much difference of opinion, even among the writers contemporary with Cheselden, or nearly succeeding to his time. The operation is performed with a common scalpel, making first a large and deep incision, and then, having cut into the side of the prostate gland, the knife is brought out along the groove of the staff into the membranous portion of the urethra. In a case in which the operation was done upon the dead subject, the author thus describes the incision, as ascertained by a careful dissection. "The tract and extent of the incision in the prostate appeared to be from an inch to an inch and a half in length, and in an oblique direction, leaving the seminal ducts and caput galinaginis to the right, and ending in the membranous part of the urethra." Of sixteen patients operated upon in this manner in the Winchester Hospital, and in private practice, two died, and in one of these there was found much disease of the kidneys, while the other presented extensive disorganization of the lungs.

The author objects to the advice given by Dr. Willis, who says, that "the perfection of the operation consists in making as small a nick as possible into the anterior edge of the prostate, and tearing the rest; and remarks, that there are several objections and inconsistencies which might be observed upon in the practice of the most successful lithotomists; giving, as an instance, the practice of Mr. Martineau, who lost only

two cases out of 84, cut in 17 years, and who, nevertheless, was in the habit (as the author alleged) of making a lateral enlargement of the wound in withdrawing the knife, whereby the internal pudendal artery must often have been in jeopardy, and of putting lint and a pledget of tow over the wound to exclude the air. He concludes by remarking, that the main points on which he particularly insists, are, "a free incision of the neck of the bladder, so that the stone may be extracted without laceration, and a large external wound, properly kept open, in order to avoid all risk of urinary infiltration."

The next meeting of the Society will be held on Jan. 10th, 1843.

CONVERSAZIONE AT ST. THOMAS'S HOSPITAL.

On Friday, the 16th inst., the second of the evening meetings for the session, given by the medical teachers of this school, was held in the great hall of the hospital. In an eloquent address on the subject of *mollitis ossium*, Mr. Solly commenced the proceedings of the evening. He remarked, "that in undertaking the honourable task with the performance of which the heads of this school had entrusted him, he felt that in the vast assembly before him he recognised two classes of auditors, to one of which the technicality of a medical subject, if minutely treated, would prove as tedious as it was unintelligible, while to the other the simple elements involved in the first principles of his subject would equally fail to interest or entertain. He felt, notwithstanding, that a new and vigorous impulse was being imparted to the progress of medical science, and that a gratifying patronage was being offered to the exertions of its teachers, when he saw that men, to many of whom the literature of our country was eminently indebted—others whose distinguished labours had contributed to further the usefulness of science—mingled, with encouraging warmth, among the members of a professional assembly, invited to partake in the common interest which must attend the discovery of a new truth, or the development of a new principle within the immediate pale of medicine in particular. Under the twofold obligations which, he conceived, he was called upon to fulfil, to combine the elementary with the technical, he would observe, in preliminary, that as the skeleton, the passive frame-work of the body, constituted in the view of many nothing more than an inert system of machinery, whose component levers were appropriately sustained in their office of supporting, or determinably wielded in the act of locomotion by a superadded system of muscles, the sum

of which gave its form and outline to the body, it was important to impress upon all the established truth, that if in health the bones lay silent beneath the covering of more sensitive structures, and seldom received or conveyed to the conscious mind the impress of external objects, under the conditions of disease they acquired properties as vital, sensibilities as acute, as any organ or part in the whole system, the warmth and pulsations of which could be felt and examined. However dense or stone-like any portion of the osseous system may be, no one present required to be informed that it was a compound of two different elements, one an earth, and, viewed separately, quite inorganic, the other an animal constituent. To the properties of the former this fabric owed its solidity; to those of the latter the tenacity and flexibility of its structure were equally due. Let one of the component elements be altered in quality, or altogether removed, and the dependent properties of the system will correspondently alter or disappear. Whatever might be said of the depressed standard of its vitality under the conditions of vigorous health, he might readily concatenate a long array of diseases to shew that this, indeed, did not, any more than other and more actively endowed systems, enjoy exemption from the inroads of disease. Inflammation, ulceration, and suppuration, had the bone itself frequently for their seat. That anomalous example of animality, the hydatid, flourished and multiplied in the interior of its structure. Tubercular matter, which mingles protracted misery in too many instances with the advantages of our climate, and the comforts of our civilized country, frequently changes the very structure of the bone; malignant affections assume in this system a determinate character. But the most remarkable process of disorganization of any to which the bone is incident, is unquestionably that of which he should this evening have the honour more particularly to speak. In surgery it has long been taught, that the whole or parts of the osseous system, at two different periods of life, are liable to become the subject of a structural change, by which their earthy constituents are removed, while the softer parts remain. From this results the *softening* of the bone. Although, on that occasion, time would not permit him to enter into details of controversial points, he believed that that form of softening incident to infancy and childhood, and called rickets, could no more be termed a *disease*, than simple emaciation of the soft structures of the body dependent upon imperfect or perverted digestion and assimilation could be rightly brought under that designation. That softening which occurs in the adult is slow in its origin, progressive in its course,

and fatal in its tendency. It is to the former affection, although the same in external and *mechanical* character, what a malignant is to a non-malignant disease. He was not acquainted with, nor could he discover in the records of surgery, a single authenticated example of *complete* recovery from this latter form of mollities of the bone. In advocacy of the view which contends for essential difference between the character of this disease as it happens in infancy, and that mode in which it presents itself in the adult, he would quote the opinion and experience of M. Guérin. He was sorry that he could make no addition to our limited knowledge respecting the actual causes of this disease. It might indeed be declared, for it was infinitely better to expose and confess our ignorance than to cloak it under the canopy of verbal speculations, that at present nothing was definitely known of the conditions which remotely or immediately were capable of producing the disease. He would emphatically remark, that it would redound advantageously to the progress of medical science, if doubts were always expressed, and ignorance, in the spirit of candour, always exposed; personalities would then be happily immolated at the shrine of the general good."

Mr. Solly then proceeded to detail the particulars of a remarkable case of mollities ossium in a female, which recently occurred at the Hanwell. The appearances of the body, and the bones of the extremity, and their microscopic changes, were illustrated by numerous and well-executed diagrams. The bones were much enlarged and softened; the extremities were much distorted; fractures of the clavicles and femora had, on several occasions, occurred; the skull was considerably thickened, while the structure of the diploe had been rendered more cancellous by absorption. The medullary cavities of the cylindrical bones were filled with a soft grumous pulaceous matter.

The previous history of the case, including several points of interest.—In this case the disease was not a family complaint. The patient had passed through a long period of mental and bodily suffering before she was ultimately removed to the Hanwell Asylum. At the period when the mind became evidently affected, the deformity in the body began. A marked improvement now took place in the state of the mind, and which continued in a *sound condition* until the very termination of the case. Mr. Solly then alluded to the alleged discovery of entozoa on the bones of this individual, by an ingenious microscopic workman. As the subject had lately excited considerable curiosity in the hospital, he felt it his duty to investigate the structure of the bones, which he then exhibited, with especial care, with the assistance of his able microscopic friends, Mr. Busk, and Mr. Queckett.

He had fully convinced himself that the reputed worms were nothing more than foreign particles incorporated with the substance of the sections prepared. He had not, therefore, the satisfaction of stating that they had discovered any thing important as a clue to the pathology of this singular disease. Mr. Solly remarked it as a striking circumstance in the history of this disease, that in the post-mortem inspections of twenty cases which he had collected, the appearances and changes in all were very exactly the same. The cases recorded by Mr. Thompson, Mr. Howship, and Mr. Curling, furnished facts of great interest. That of Madame Sapiot, described by Merlaud, was a remarkable case—all the bones, except the teeth, were as soft as wax. In conclusion, Mr. Solly alluded to many interesting facts in connection with the subject.

Dr. Hodgkin then explained a new method of conducting the examination of the chest and abdomen, lately adopted by Mr. Francis Sibson, house-surgeon to the Nottingham Infirmary. The real improvement in this mode of inspection appears to consist, not in eliciting the actual conditions of the viscera contained in these cavities, but rather in *recording* the relative situations of the organs, or the parts of an organ; the displacements caused by effusions and disease; the outline, and therefore the size of the affected organ. The plan may be briefly described as consisting in the use of a square frame of wood, large enough to equal the length and breadth of the trunk, having wires or pieces of tape longitudinally and transversely disposed, and fixed to the frame. A sheet of thin wire gauze is fitted into this square, so that the lines of tape or wire may be separated, or approximated upon the surface of the gauze, according to the area of the spot desired to be indicated and measured. Adjusting then a sheet of paper on the square, the outline of the chest or abdomen being taken or drawn, the exact limits of the affected region can be accurately defined. Thus, as Dr. Hodgkin remarked, the veil of flesh and bones which conceals from view the varied changes which disease occasions in the recesses of the important organs, is virtually removed. Already numerous very valuable and curious facts have been developed by the industry and ingenuity of Mr. Sibson. The position and extent of the liver, the diaphragm, the lungs, heart, and large vessels, are most accurately and systematically defined in their outline by his labours. We may allude particularly to the discovery of a new muscle by this gentleman. It was described as a slip of one of the scapuli, descending to insert itself into the *cupola* or summit of the pleura, and serving the part of a suspensory apparatus. In conclusion Dr.

Hodgkin observed, that this method of tangibly recording the actual conditions of the viscera of the chest formed a very important and useful addition to the immortal discovery of Laennec, and every praise was due to Mr. Sibson for the success with which he had carried out the plan.

On the central table of the hall, rare and remarkable specimens of mollities ossium were exhibited, for which the museum of this hospital in its surgical collection has long been distinguished. Several valuable microscopes were distributed over the table, and specimens of microscopic preparations were actively exhibited, to the great delight and entertainment of all. Among the company present, which amounted to more than 800 persons, we observed some of the most distinguished professors in the metropolis, many of the governors of the hospital, and in addition many distinguished persons. Among others we recognised, Sir James Clark, Bart.; Sir George Carroll; Sir George Lefevre; Count Rolin; William Williams, Esq. M.P.; William Pilcher, Esq.; Sheriff and Alderman Farncomb; Richard Hethman Pigeon, Esq. Christ's Hospital; Thomas Weeding, Esq.; and many others of the governors of the hospital. Dr. Freund, of Vienna. Dr. Dieffenbach, Berlin; Antonius G. Aneury, Beyrout; Professors Owen, Sharpey, Grant, Murphy; John E. Gray, Esq. British Museum; Dr. Bright; Dr. Babington; Dr. Holland; Dr. Clutterbuck; Dr. Rigby; Dr. Forbes;—Callaway, Esq.;—Skey Esq.

THE "MEDICAL TIMES" AND DR. MARSHALL HALL.

Medical Times Office, Dec. 17, 1842.

To the Editor of the Medical Gazette.

SIR,

Your insertion of Dr. Marshall Hall's *injuriously* and certainly not over-correct charges, gives me a claim in *honest, English fair-play*, to a reply, and I dare say our being fellow-journalists will not invalidate that claim.

As far as Dr. Hall has made himself understood to me, his charge or charges resolve themselves into this—that I announced in your Journal his correction of his lectures "*as if* he had entered into a spontaneous arrangement" with me. He does not complain of my doing something, but doing it "*AS IF*"—a kind of constructive guilt which once counted against the sovereign, and still counts, it seems, against Dr. Marshall Hall, Fellow of the College of Physicians. Unfortunately even this ingenious "constructive" charge is without truth. The announcement I ordered is the shortest, plainest, least ambiguous, and most free

from "*as ifs*" possible; viz. "*a set reported verbatim expressly* for the Medical Times, and carefully corrected by the lecturer"—calling the most possible attention to the reporter's labours or merits, and the least possible to those of Dr. Hall. When Dr. Hall, therefore, asserts that I announced explicitly or implicitly his entering "*into a spontaneous arrangement with me*," he asserts that which is not true, *as he knew*. But though I mentioned no such thing, Dr. Hall knows there was a spontaneous arrangement,—*with me too*,—and *not with me only*, but with the reporter also, and this two-fold spontaneous arrangement was not only to *correct*, but to *rewrite* his lectures; and conscious of this disgraceful compact—for it was disgraceful to *him* if it were meant to have been underhand and on the sly,—his timidity took every thing, however distant, for the divulgement of his *compromising* secret. He himself avows that he did not discourage the reporter in his intention to give his lectures; he owns he forthwith offered his assistance, that he pledged himself to *correct*, nay to *rewrite* them, and though he *now* explains the latter offer by the flimsy and palpably false pretext that the lectures needed it from the incorrectness of some "*medical terms*" (which any medical man could correct in five minutes), yet the fact remains unchanged that he "*spontaneously arranged*" with the reporter, first to *allow* his lectures to be reported; secondly, to revise them himself when reported; thirdly, to *rewrite* them. But further. Though Dr. H. says he undertook the revision and rewriting, to do a personal service to this unknown "*person calling himself a short-hand writer*," who applied to him, he says, not for me, not for the Journal, but for himself (the reporter), and Dr. Hall marks this in italics—yet did Dr. Hall, unwritten to by me, uninvited, unsolicited—"spontaneously," if he like the word better, write to me—hitherto a passive party in this matter—to what effect do you think? Why, "that it had occurred to him that it might be well to postpone the insertion of his lectures until the first number of the new year," (kind suggestion!) and "*undertaking in that event to write them out himself*." He gave his reasons. "*They would be more perfect, and of more service to me*" (the Editor). But this did not end his spontaneous kindness. He arranges to do the work "*well*," and concludes, "*you might insert several notices, and excite a little expectation!*" This letter is dated the 8th inst.; the dreadful advertisements, announcing "*careful revision by the lecturer*," appeared on the 10th. So you see, sir, the spontaneous arrangement which the fastidious Doctor thinks so disgraceful, even in

imagined possibility, absolutely did take place in full plenitude with every aggravating complication—and that too not with *me* only, but with my *employé* also.

Dr. Hall being a gentleman who can do great good on small inducements, says that it was necessary to rewrite the lectures, because they were so faulty. They may be faulty, but (as every body that reads them may see) they are exactly as he delivered them. If this, then, be a charge against himself, let him answer it to his insulted auditory: if against the reporter—whose deservedly high character as a short-hand writer, is, in truth, his bread—the charge is a miserable and transparent calumny, which no man of spirit (however driven in self-defence) would have resorted to. That reporter's answer to this, as to Dr. Hall's other statements, is conclusive. He affirms that directly or indirectly Dr. Hall *sought* the report of his lectures in the Medical Times; unasked, gave him a card to the lectures; invited, courted, welcomed the revision of the lectures; declared, when he saw the first, that "it was word for word," and read in his own parlour, *before the reporter*, page after page, saying to each, "there is nothing to correct in that." And he further asseverates that Dr. Hall at every interview was exuberant in his expressions of anxiety to serve *me*, and felicitated himself that he had now an opportunity of making what he called an "atonement" for his past inactivity. If Dr. Hall, therefore, be not (as universal report has it) fatally compromised to the Lancet by the reviewship of his own books, none but himself can understand, much less explain, the excitomotor principle of his recent letter to you—a letter which, whatever may be thought of the originality of Dr. H.'s physiological theories—puts that of his civic practices far, very far, beyond dispute.

Replies, sir, always require more space than charges, which are often mischievous in proportion to their unspecific brevity, but I trust you will overlook the length to which my remarks have extended, in pity for an unfortunate brother Editor involved *bougré*, *malgré*, in a contention with a person in whom the very genius of professional squabbles seems to be incarnate, and who, as if under some invincible fatality, can have no dealings with predecessors or cotemporaries save to their loss.

Appending the confirmatory observations of my esteemed *collaborateur*, Mr. Piers Healey, the barrister, and of Mr. Gregory, the reporter, I am, sir,

Your obedient servant,

THE EDITOR OF THE MEDICAL TIMES.

NOTE FROM MR. HEALEY.

My dear —,—I am too happy to have

an opportunity of expressing my entire concurrence not only in your statement of facts but in every sentiment you have expressed in reference to them. If Dr. Hall, after your exposé (which I thus willingly make my own) do not lose caste—if that misfortune still await him—I shall have a far humbler opinion of the present heads of your noble profession than any thing in their past history warrants.

Believe me, my dear —,

Faithfully yours,

(Signed) T. PIERS HEALEY.

Essex Street, Strand, Dec. 17.

MR. GREGORY'S NOTE.

SIR,—Having read your letter to the Editor of the Medical Gazette, I conscientiously testify that all therein related with regard to myself and my interviews with Dr. Hall, is true to the letter. And in contradiction to Dr. Hall's statement, which to my own knowledge does not contain but one assertion which is not either a falsity or a mutilated truth, I unhesitatingly pledge my character as a short-hand writer of nine years' experience to the entire correctness of my reports of his lectures now in course of publication in the Medical Times.

I remain, &c.,

(Signed) H. GREGORY.

To the Editor of the Medical Times.

16, St. James Street, Clerkenwell,
Dec. 17, 1842.

POWER OF EXPULSION FROM THE COLLEGES OF PHYSICIANS AND SURGEONS.

To the Editor of the Medical Gazette.

SIR,

THERE is every reason to expect, in the ensuing year, the grant of new charters to the medical colleges, and the consequent extension of the privileges and protection they afford. A consummation devoutly to be wished is, that every physician and surgeon should be compelled to enrol themselves members or licentiates of one of the British metropolitan colleges or corporations, with an *ad eundem* privilege to practise throughout the empire. No surer, more efficient, method could be devised for carrying out the moral of your excellent motto, "dignitatem Artis Medicæ tueri." Utopian schemers of impracticable hypotheses would be answered by the working of our reformed institutions, the failure of which they already predict in their sarcastic cry of "parturient montes."

After securing the more perfect education and economy of the profession in its different departments, the next step of primary

importance is the power of expelling unworthy members. Whether this object is comprised in the new charters, or to be attained by subsequent by-laws, such a provision would be hailed with enthusiasm by every honourable practitioner. The enlightened men of the present Councils, by whose liberality so great a concession to public opinion is chiefly owing, should seriously consider this hitherto neglected point,—a point, surely, on which the very existence of the *esprit du corps* of every corporate body must necessarily depend. This point once accomplished, the College councils, or governing bodies, would immediately vindicate medical honour and dignity, by drumming out of the profession the notorious "Fellow" of Ely Place, and, *inter alios*, the licentiate physicians and surgeons who pander to popular prejudice in consultation with bone setters and other unlicensed *ignorami*; whilst the righteous sword of medical justice would be held in salutary terror over the heads of obsequious delinquents, who hunt for patients *coute qui coute*, and, in defiance of the whole medical press, oust their professional brethren from public appointments which their predecessors vacated no sooner than honour and conscience imperatively called for. To strike such men from the registration lists is the only cure for such an evil. An editorial article on the above subject would oblige

A CONSERVATIVE MEDICAL
REFORMER.

Dec. 17, 1842.

NEW LUNATIC ASYLUM AT DIJON.

A GENERAL asylum for the insane has just been founded at Dijon, on a magnificent plan, and of a fine architectural design, on the spot formerly occupied by a Carthusian convent. Besides the patients of the department, those of the neighbouring ones will also be received. A chief physician will reside as director in the establishment, which will be capable of containing more than 400 patients. Eleven *hectares* of land are annexed to it, the cultivation of which by the patients, whose situation admits of it, will be one of the most powerful means of cure, a fact demonstrated for some years at Paris, both at Bicêtre and the Salpêtrière.—*Gazette Médicale*, Dec. 3d, 1842.

RECEIVED FOR REVIEW.

On the Chemical Discrimination of Vesical Calculi. By E. A. Scharling, A.A. L.L.M., Professor of Chemistry in the University and Polytechnic School, Copenhagen. Translated, with an Appendix, by S. Elliott Hoskins, M.D. With Plates.

Vivisection Investigated and Vindicated. By George F. Etherington, M.D. &c.

Chemical Manipulation; being Instructions to Students in Chemistry on the Methods of Performing Experiments of Demonstration or Research, with accuracy and success. By Michael Faraday, D.C.L., F.R.S. G.S. &c. Third Edition, revised.

ROYAL COLLEGE OF SURGEONS.

LIST OF GENTLEMEN ADMITTED MEMBERS.

Friday, December 16, 1842.

M. Ward.—F. J. Osborne.—C. P. Daniell.—W. T. Edwards.—W. S. Watson.—A. Stephens.—J. Hancock.—F. Wallis.—R. Baker.—W. Milner.—P. Benson.—A. King.—H. R. Daniell.—T. W. Sothergill.—F. Hawthorn.

Monday, December 19, 1842.

H. Hadlow.—G. Newstead.—H. Carless.—J. Lugg.—T. Howell.—J. C. Blanshard.—G. Holman.—J. P. Oates.—H. W. Brest.—G. Pink.—T. Lyle.—F. B. Hunt.—T. Good.—R. Cammack.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED
CERTIFICATES.

Thursday December 15, 1842.

J. Southern, Ludlow.—G. C. Dale, London.—Richard Jones, Blakeney, Gloucestershire.—S. Poyser, Wirksworth.

A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending
Saturday, December 10, 1842.

Small Pox	13
Measles	21
Scarlatina	35
Hooping Cough	21
Croup	9
Thrush	4
Diarrhoea	7
Dysentery	0
Cholera	0
Influenza	0
Typhus	15
Erysipelas	5
Syphilis	0
Hydrophobia	0
Diseases of the Brain, Nerves, and Senses ..	130
Diseases of the Lungs and other Organs of Respiration	280
Diseases of the Heart and Blood-vessels ...	15
Diseases of the Stomach, Liver, and other Organs of Digestion	52
Diseases of the Kidneys, &c.	5
Childbed	7
Ovarian Dropsy	0
Disease of Uterus, &c.	2
Rheumatism	7
Diseases of Joints, &c.	2
Ulcer	0
Fistula	0
Diseases of Skin, &c.	0
Diseases of Uncertain Seat	89
Old Age or Natural Decay	65
Deaths by Violence, Privation, or Intempe- rance	19
Causes not specified	3
Deaths from all Causes	815

WILSON & OGILVY, 57, Skinner Street, London.

THE
LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL.

OF

Medicine and the Collateral Sciences.

FRIDAY, DECEMBER 30, 1842.

LECTURES
ON THE
THEORY AND PRACTICE OF
MIDWIFERY,

*Delivered in the Theatre of St. George's
Hospital,*

BY ROBERT LEE, M.D. F.R.S.

LECTURE XI.

*History and Demonstration of the Nerves of the
Uterus.*

FROM the sensibility and contractile power of the uterus, Galen inferred that it must be supplied with nerves, but he says they are extremely small, compared with the size of the organ. He knew that the uterus and bladder received not only nerves from the great sympathetic, but that they were supplied with branches from the spinal or sacral nerves. From the time of Galen till the middle of the sixteenth century, it is probable that the nerves of the uterus were not examined by any anatomist. Vesalius then stated that small twigs of nerves on each side proceed to the neck of the uterus and lower part of the fundus from the sacral nerves, and that the highest portion of the fundus receives some very minute branches from the great sympathetic nerve. The nerves of the uterus were described by various writers during the latter part of the sixteenth century, but in an equally or still more imperfect manner. The anatomists of the seventeenth century also allude to them, but with no greater accuracy or precision, and it is certain from the works of Willis, that he had traced the great sympathetic and sacral nerves to the neck of the uterus, and no further, and that he was unacquainted with the branches of the great sympathetic which are sent off from the renal plexus on each side, and accompany the spermatic vessels to the ovaria, fallopian tubes, and uterus. In De Graaf's seventh Plate, which I now show you, the trunk of what he states

to be a nerve is represented passing on each side into the posterior surface of the neck of the unimpregnated uterus, and ramifying like the branches of a tree over the body and fundus. Saltzman and Reuss, Vater, Rast, Daventer, and Winslow, all state that the uterus has nerves; but their works contain no new facts on the subject. In this Plate of Walter, the view of the nerves of the uterus is extremely defective, a few small filaments only being seen passing into the lower part of the orifice and cervix from the upper part of the hypogastric plexus. The fundus and body of the uterus are left, you see, covered with peritoneum and destitute of nerves. The spermatic nerves are not represented. Haller, likewise, appears to have confined his attention to the nerves of the unimpregnated uterus, and with no greater success than Walter and other anatomists had done. Dr. William Hunter was the first who examined the nerves of the gravid uterus and suspected them to be enlarged in proportion to the vessels. "I cannot," he observes, "take upon me to say what change happens to the system of uterine nerves from utero-gestation, but I suspect them to be enlarged in some proportion, as the vessels are." Upon this occasion we profess only to give the anatomy of the gravid uterus; yet, since the descriptions of the nerves of the uterus which I have read, seem to me unsatisfactory, I shall so far go beyond my subject, as to describe the hypogastric nerves, such as they appeared to me in a female subject, carefully dissected for that purpose.

All the uterine nerves come from the intercostals, and pass in the form of plexuses with the blood-vessels, as in the other abdominal viscera; so that there is a spermatic and hypogastric plexus of each side attending the vessels of the same name. They are principally the branches of two large cords of the intercostals, which run down before and on each side of the aorta in the abdomen, much in the same manner as the trunks of the intercostals run down upon the sides of, and behind that artery. On the left side,

this large cord comes down from the semilunar ganglion, partly as a continuation of the anterior cord of the intercostal, from the part where it is forming the semilunar ganglion, and partly as a plexus of nervous filaments coming down more forwards from the ganglion itself. This cord passes down below the beginning of the renal artery, all along the sides of the aorta. In its way, it receives branches from the intercostal, and gives off branches, so that it has the appearance of a plexus, although the principal cord can always be distinguished. It gives off the renal plexus, which is situated upon the side of the uppermost vertebra lumborum, and passes to the sinuosity of the kidney, behind the renal vein; but both before and behind, and above and below, the renal artery. Opposite to the third vertebra lumborum, the cord gives off two pretty large branches, and some small filaments of nerves which run down with and before the spermatic artery. The spermatic plexus may be distinctly traced with the artery into the ovary and adjacent parts at the upper part of the broad ligament.

Immediately below the origin of the spermatic plexus, opposite to the same vertebra lumborum, two large branches come from the trunk of the intercostal nerve in the common direction of these communicating branches, viz. forwards, downwards, and inwards, which join the great cord, and make it large from this conjunction downwards. On the right side, the cord comes down from the semilunar ganglion, close to the root of the superior mesenteric plexus and artery, giving a few branches only to the renal plexus, and runs down on the right side of the aorta, as the other on the left. And on the right side, the renal plexus which comes chiefly from the semilunar ganglion as it passes towards the kidney behind the vena cava and renal vein—the renal plexus, I say, sends down the spermatic plexus behind the beginning of the renal, which soon joins and passes with the spermatic vessels of this side. The two cords, right and left, may be said to constitute a lumbar plexus all along the aorta, which makes the basis of the plexuses which accompany the branches of that artery; or they may be considered as the anterior cords of the intercostals in the abdomen. At the upper part of the fourth vertebra lumborum, the right cord gives down a considerable branch with the iliac artery, which branching forms a kind of sheath-like plexus upon the artery in its way to the groin.

At the bifurcation of the aorta, the right and left cord unite upon the forepart of the aorta, and make a plexus from that part directly downwards, as far as the lower part of the fifth vertebra lumborum, and then finally divide into what may be called

the right and left hypogastric nerve. On the right side, a pretty large branch comes from the trunk of the intercostal, on the side of the fourth vertebra lumborum, which passing downwards and inwards behind the right iliac artery, joins the plexus of the two united cords before the last vertebra lumborum. The hypogastric nerve passes round the side of the pelvis, between the peritoneum and the hypogastric vessels and upon the inside of the ureter, at the middle of the side of the pelvis, where the nerves split into a double range of branches, viz. anterior and posterior. The posterior range goes to the side of the rectum, some branches passing to the back part, and others to the forepart of the gut; and the first and uppermost of those branches are manifestly reflected upwards upon the gut, directing their course towards the colon. The anterior range of branches is the largest and may be considered as the continuation of the hypogastric nerve, in the form of a plexus: where the hypogastric vessels are passing to the side of the uterus and vagina, this nerve situated behind them, spreads out in branches like the portio dura of the seventh pair, or like the sticks of a fan with many communications, which are sent to the whole side of the uterus and vagina. The uppermost branches pass upwards in the duplicature of the broad ligament, towards the fundus uteri. The branches as they go to the lower part of the organ pass less obliquely, then horizontally, and the lowest of all run downwards on the side of the vagina. The greatest crowd or number of these branches go to the os tincæ and the adjacent parts of the uterus and vagina." This is probably the only dissection that Dr. Hunter ever saw of the nerves of the uterus, and from this he suspected that they enlarge during pregnancy like the blood-vessels. In his engravings there is no representation either of the absorbents or nerves of the uterus.

Mr. John Hunter says twice in his works, that the nerves of the gravid uterus are not enlarged in the slightest degree during pregnancy. "The uterus," he observes, "in the time of pregnancy increases in substance and size, probably fifty times beyond what it naturally is; and this increase is made up of living animal matter, which is capable of action within itself, I think we may suppose its action more than double; for the action of every individual part of this viscus, at this period, is much increased, even beyond its increase of size, and yet we find that the nerves of this part are not in the smallest degree increased. This shews that the nerves and brain have nothing to do with the actions of a part, while the vessels whose uses are evident increase in proportion to the increased size; if the same had taken place with the nerves we should have reasoned

from analogy." Mr. Hunter left no preparations of the nerves of the uterus to support this assertion, and at the beginning of the year 1838, there were no preparations in this country, shewing the nerves of the human uterus dissected, either in the unimpregnated or gravid state, or in the uteri of any of the lower animals. Sir Astley Cooper then maintained, that it was impossible for the nerves of the uterus, or the nerves of any other organ, to increase under any circumstances.

In 1822 Professor Tiedemann published a description of the nerves of the uterus, with these two engravings. In the first the spermatic nerves are represented on both sides accompanying the spermatic arteries to the ovaria. The spermatic veins, and the nerves which followed them, are not seen. A few small branches of nerves from the hypogastric plexus are seen ramifying on the posterior and inferior surface of the uterus with the uterine arteries; the whole of the superior part of the uterus is covered with peritoneum. In the second plate some small branches from the left hypogastric nerve, before it enters the great ganglion at the cervix, are seen accompanying the left uterine artery on the left side of the lower part of the uterus. From Professor Tiedemann's description and Plates it might be inferred, that the human gravid uterus is more sparingly supplied with nerves than any other organ in the body. The fundus uteri, which is possessed of the greatest degree of contractile power, is, you see, quite destitute of nerves. In 1823 Lobstein stated, that the uterus both before and after conception had a very scanty supply of nerves. He says, "*Rarissime in uteri substantiam tum vacui tum gravidi sese immittere videntur nervorum surculi.*" In 1829 Professor Oslander affirmed that the nerves of the human uterus had never been seen, either by himself, or by any other anatomist, and that he had been deceived by the authority of other scientific persons, when he stated that nerves were spread over the whole uterus.

On the 8th of April, 1838, while dissecting *this* gravid uterus upon the table of seven months, all the veins of which were injected, I accidentally observed what appeared to be the trunk of a large nerve proceeding upward from the cervix to the body of the uterus along with the right uterine vein, and sending off branches in its course to the posterior surface of the uterus, some of which accompanied the ramifications of the veins, and others were inserted into the peritoneum; this broad band, resembling a plexus of nerves extended across the posterior surface of the uterus, and covered the nerves midway between the fundus and the cervix. On the left side the same appearances were seen, and several branches of the nerves accompanying the uterine vein were distinctly con-

tinuous with branches of the great plexus, covering the body of the uterus. As all the blood-vessels and nerves had been cut away close to the neck of the uterus, it was impossible to trace these nerves on the body of the uterus back to the hypogastric and sacral nerves, and demonstrate their continuity with these; but I had no doubt that they were the uterine nerves enlarged by pregnancy. I first shewed them to Mr. H. C. Johnson who had likewise no doubt that they were ganglionic plexuses of nerves, although they had not been represented in Professor Tiedemann's Plates. The preparation was placed in the museum of the hospital on the 1st October, 1838. Several eminent anatomists to whom I shewed the preparation, thought that I had been misled by appearances, and that they were absorbent vessels accompanying the veins and tendinous fibres spread across the posterior surface of the uterus.

On the 18th December, 1838, a woman in the sixth month of pregnancy died in St. George's Hospital, a few hours after the foetus and its appendages had been expelled. The uterus was removed with all its blood-vessels and nerves remaining connected with it,—the whole of the great sympathetic was taken out, and the nerves were carefully traced from their origins to the different parts of the uterus, while the preparation was covered with alcohol. About eight months were spent in tracing the spermatic, hypogastric, and sacral nerves of the uterus, and their distribution over the organ. This could never have been accomplished, I believe, had the dissection been made in air, or water. If you examine this preparation, you will see, behind the uterus, the aortic plexus dividing into the right and left hypogastric nerves. These nerves soon subdivide into a number of branches to form the right and left hypogastric plexus. Each of these plexuses, after giving off several branches to the ureter, rectum, and uterus, descends to the side of the neck of the uterus, and terminates in a large oblong ganglion. The left hypogastric plexus first sends off from its upper and anterior part, some small branches to the ureter. About midway between the aortic plexus and the ganglion at the cervix, the hypogastric plexus sends off several considerable branches directly into the upper part of the cervix uteri, which spread out under the peritoneum of the body of the uterus. The hypogastric plexus then, you see, gives off a large branch which passes between the ureter and uterus, to the trunks of the uterine veins and artery. This branch enlarges and becomes thin and broad as it approaches these vessels, and terminates in a great plexus of nerves, which completely encircles the vessels. This plexus of nerves surrounding the vessels is joined below by several branches which proceed from the anterior and superior part of the ganglion,

and which pass on the outside of the ureter to the plexus around the vessels. All this is clearly seen in the preparation. But if you draw the ganglion a little aside you will see several branches proceeding from its inner surface to the plexus around the blood-vessels, which run on the inside of the ureter, so that a loop or complete ring of nerves surrounds the ureter, as well as the uterine artery and vein. From the plexus surrounding the vessels, three large nerves proceed upward with the vessels to the upper part of the uterus, enlarging as they ascend. These are evidently the same nerves which you saw in the last dissection. The posterior branch sends off in its course smaller branches which accompany the ramifications of the uterine vein, on the posterior surface of the uterus, and spread out upon the inner surface of the peritoneum. Passing upwards beyond the junction of the spermatic with the uterine veins, and running between the peritoneum and the great plexus, situated on the body of the uterus, it spreads out into a web of thin broad branches and slender filaments, some of which are inserted into the muscular coat and peritoneum, and others follow the veins and arteries to the fundus uteri, and pass with the vessels into the muscular coat of the organ. The middle and anterior branches closely adhere to the uterine vein as they ascend, and form around several plexuses which invest the vein. From these plexuses, branches are sent off to the anterior surface of the uterus. These nerves, you see, ascend and closely unite with the great transverse plexus on the body of the uterus. This plexus on the left side arises near the mesial line on the back part of the uterus, midway between the fundus and cervix, from a mass of fibres which adhere so firmly both to the peritoneum and muscular coat, that it is difficult precisely to determine their arrangement. From these fibres the plexus proceeds across the uterus in the form of a thin web, to the point where the spermatic vein is leaving the uterus. After closely uniting with the nerves accompanying the uterine vessels, this plexus proceeds outwards to the round ligament, becoming less firmly adherent to the peritoneum, where it unites with a plexus on the anterior surface of the uterus, and spreads out into a great web under the peritoneum. This plexus is loosely attached through its whole course to the subjacent muscular coat, by soft cellular membrane.

From the second, third, and fourth sacral nerves, but chiefly from the third, branches pass into the posterior border of the ganglion at the cervix, and are lost in its mass. From the inner surface of the ganglion numerous small soft nerves are given off to the neck of the uterus, some of which ramify under the peritoneum, and others pass deep into the muscular coat. From the anterior and in-

ferior borders of the ganglion many large nerves are given off to the bladder and vagina, and from its posterior margin to the rectum.

On the left side the spermatic nerves form a plexus around the spermatic artery for about two inches from its origin. A small branch is then sent off from the spermatic artery to the ureter, accompanied with some filaments of nerves. The spermatic artery then passes down between the spermatic veins, and some of the nerves leaving the artery get on the outside of the veins, and numerous filaments are observed ramifying on the coats of the veins, and also upon the absorbents, and forming loops around them. Branches of nerves are then sent to the fallopian tube, and to the ovarium, at the base of which a great plexus is formed. The spermatic nerves then appear to enlarge as they proceed towards the uterus along with the artery and veins, and in their course filaments are sent to the peritoneum and to the veins of the ureter: some filaments pass down along with the spermatic artery to anastomose with the nerves accompanying the uterine arteries and veins, and other branches pass to the round ligament, and the great plexus on the body of the uterus.

On the right side of the uterus, the distribution of the hypogastric, spermatic, and sacral nerves does not differ essentially from what you have seen on the left side. The form and situation of the great plexuses on the body of the uterus are, however, more distinct, and they present the appearance of a white pearly fasciculated membrane, about a quarter of an inch in breadth, proceeding from the mesial line, at right angles, to the nerves accompanying the blood-vessels across the body of the uterus to the round ligament, where it unites with a plexus on the anterior surface of the uterus. Numerous branches are sent off from the upper and lower borders of the posterior plexus to the muscular coat of the uterus. An extensive and intimate union at various points is distinctly perceptible between the branches sent off from this plexus and the branches of the nerves accompanying the uterine arteries and veins, and those which proceed from the hypogastric plexus and cervical ganglion to spread out and form a great nervous web under the peritoneum on the posterior surface of the uterus. On the anterior and upper part of the neck of the uterus there is a great mass of reddish-coloured fibres, firmly interlaced together, resembling a thin broad ganglion of nerves, into which numerous large branches of the hypogastric nerves on both sides enter, and to which they firmly adhere. From the upper part of this fibrous substance, there passes up, under the peritoneum over the whole anterior surface of the uterus, a great plexus, the branches of which pass into the muscular coat, or unite with those nerves proceeding

with the blood-vessels to the upper part of the uterus. Prolongations of this plexus also extend to the round ligaments, and some of its filaments unite with those of the spermatic nerves. The nervous structures now described, and which you have seen, have been represented by Mr. Perry in these two drawings.

From the form, colour, general appearance, and vascularity of these plexuses on the body of the uterus, and the resemblance they bear to ganglionic plexuses of nerves, and from their branches actually anastomosing and coalescing with the spermatic, hypogastric, and sacral nerves, I was led to conclude, on first discovering them, that they were nervous ganglionic plexuses, and constituted the special nervous system of the uterus, enlarged by pregnancy. This dissection was examined by many of the most eminent anatomists in London, and they all admitted that the great plexuses on the body of the uterus were continuous with the spermatic, hypogastric, and spinal nerves. In a paper read to the Royal Society (Dec. 12th, 1838), I described the appearances displayed in these dissections and drawings. It was referred by the Committee of Physiology to Professor Owen and Mr. Kiernan, and these distinguished anatomists decided, from an examination with the microscope of small portions of the plexuses under the peritoneum, which had long been immersed in rectified spirit, that they were bands of elastic tissue, and not plexuses of nerves. The evidence furnished by the actual continuity of the plexuses with the great sympathetic was considered of no weight, compared with the microscopic appearances. The microscope was the only test. "The tissue of the broad, white, reticularly intercommunicating bands of fibrous matter, resembling nerves of the uterus," observes Professor Owen, "consisted of minute fibres, which were solid, smooth, equal-sized, cylindrical, and nearly transparent, irregularly interblended in their course; their diameter does not exceed $\frac{1}{10000}$ th of a line. These bands correspond in structure with the fibrous modification of cellular tissue. The component fibres did not form tubes, nor were their interspaces filled with the primitive granules, or cells, of the nervous tissue. In the nerves of the spinal system, the primitive fibres of the neurilema, which closely resemble those of the ordinary cellular and fibrous tissues, are arranged in the form of tubes, and can be distinguished into cylinder and contents. The same structure, on a minute scale, exists, according to Valentin, in the sympathetic nerves; but according to the observations of Remak and Schwann, the component fibres form solid bands, and are of a more transparent character than in the spinal nerves, but marked occasionally

with swellings, and having granules in the interspaces. I consider the difference between the nerves of the sympathetic and the fibrous cellular tissue to consist, as regards their microscopic character, in the greater proportion of granules or cells in the interspaces of the fine, reticularly interwoven, component fibres of the nervous band; and this difference I believe to exist between the two nerves of the sympathetic system and the white bands of fibrous matter which connect the peritoneum with the muscular substance of the womb, and which resemble a plexus of nerves." The communication was withdrawn from the Royal Society, and many great anatomists hailed the result as the end of the nerves of the uterus, when the investigation had scarcely commenced.

But several of the most experienced and accurate microscopical observers in this country, soon after examined other portions of the same structures at my request, and arrived at a totally different conclusion. Mr. Kiernan was afterwards requested to state the grounds upon which he had decided, but he refused to do so. The results of the investigations made by Mr. Dalrymple with the microscope on the uterine nerves in the recent state were communicated to me two years after, in the following interesting letter, which I cannot refrain from reading to you, and which you may read with advantage to those who still assert that it has been proved by the microscope, that the great ganglionic plexuses of nerves under the peritoneum of the uterus, which have now been demonstrated to you, are nothing but bands of elastic tissue, gelatinous tissue, or cellular membrane.

MY DEAR SIR,—After having seen, and very carefully examined, some weeks since, your very beautiful preparations of the nerves of the impregnated uterus, and after having felt convinced, by their continuity, colour, texture, and mode of distribution, that they really were nerves, I was a good deal surprised to hear from you and others, that their identity had been doubted; I was aware that it would have been worse than useless to have asked you for a portion of such suspected cords, to submit to the microscope, knowing that they had been very many months immersed in strong alcohol. It would neither have been fair to you, nor satisfactory to me, to have made such an attempt at solving the question.

Being anxious, however, to satisfy myself upon the subject, I obtained an uterus unimpregnated, and while it was quite recent I traced several nerves, which I recognised, from their situation round the ureter, and upon the body of the uterus, to be similar to some you had previously pointed out to me.

These filaments I submitted to the microscope, and used a very beautiful eighth of an inch object-glass, made by Ross. I found that it was impossible, with the most careful dissection, to detach any filament of nerve without including a quantity of cellular and elastic tissue; so that although the tubular portion indicating the nerve was distinct, yet it was surrounded by innumerable extremely minute threads, coiled and contorted, such as one finds the component of elastic tissue, and the ultimate element of cellular membrane.

Under slight pressure, however, the tube was plainly discernible, containing granular matter, not uniformly distributed, but collected in minute masses, at intervals. Small blood-vessels were also seen, here and there, with blood discs within them, which served to indicate the difference between the nervous and vascular tubes, and thus to avoid the possibility of error.

Being, however, aware that some of the most distinguished foreign microscopical anatomists had differed as to what was the real characteristic of nerves of the sympathetic system, I should not have troubled you with this communication had I stopped here. Feeling, from this discordance of opinion, that there was no absolute test, or at least one which was not open to cavil, I thought to try a comparison of the uterine nerves with those that undeniably belonged to the ganglionic system. I traced, therefore, some nerves upon the surface of the stomach up to the great ganglion that gave them origin; and I selected some also from the small intestine. These I submitted to the same microscopical power, and under the same circumstances of light, and pressure, and medium.

In all of these I observed the tubular part filled with granular matter, and similarly collected in minute masses. I also observed that each tube was surrounded by the minute serpentine threads before described. In fact, so closely did they agree in every particular with the appearances presented by the uterine nerves, that it would have been impossible to distinguish the one from the other.

Thus, by comparing the unknown with the known, despite the want of any absolute test, I feel perfectly satisfied of the true nervous character of the very beautiful plexuses which you have so patiently and with so much labour developed.

Admitting, then, this intricate structure to be really nervous, it is a matter of no marvel that they increase in size during pregnancy. It would indeed be wonderful if the nerves alone remained stationary, while the muscular and cellular, the serous and mucous, and the vascular tissues increased, as it is notorious those structures of the uterus do during the period of child-bearing.

If, as is also indisputable, nerves shrink and atrophy when the function of an organ they supplied is lost or destroyed, is it singular that the uterine nerves should increase, when that organ rouses itself from inaction, to one of the most extraordinary exemplifications of temporary functional vigour that the animal oecomy can any where exhibit? Pardon me this prolixity, and believe me,

My dear sir,
Yours very faithfully,
JOHN DALRYMPLE.

Holles Street, April 21, 1841.

Subsequent dissections, which I made in 1839 and 1840, of the unimpregnated uterus, and of the gravid uterus, in the third, fourth, sixth, seventh, and ninth months of pregnancy, and after delivery, enabled me not only to confirm the accuracy of the preceding observations, but to discover the important fact, that there are many ganglia formed on the uterine nerves, and on those of the vagina and bladder, which enlarge with the coats, blood-vessels, nerves, and absorbents of the uterus during pregnancy, and which return after parturition to their original condition before conception takes place. The greater number of these dissections are now placed before you upon the table for your examination; and by comparing the ganglia and nerves of the unimpregnated uterus with those of the gravid uterus, you will require no further evidence to convince you that the nerves of the uterus grow during pregnancy with the other structures. If you compare these dissections with one another, you will not only be convinced of this fact, which Mr. J. Hunter denied, but you will be satisfied that it is not in the power of any anatomist, however patient and dexterous, to dissect or arrange elastic tissue or cellular membrane so as to represent the regular distribution of the system of nerves seen in these preparations. The web of Arachne, to borrow the words of Sir Charles Bell, is the same in all of them—it reappears in every one of them. When Mr. Lawrence examined these preparations, which he did, with the utmost care, in the performance of his duty as a Member of the Council of the Royal Society, he said, “one dissection might have left me in doubt respecting the nature of these great ganglia and plexuses, but the series produces the most complete conviction in my mind. It is the nervous system of the uterus, and can be nothing else. The microscope is not required to discover it. It is seen much better with the naked eye than with any magnifier.” Dr. M. Hall, after closely examining this series of dissections, said, “It is the nervous system of the uterus which you have displayed. Never doubt this for a moment, whatever opposition or contradiction you may encounter. I will never believe my eyes again, if these great

plexuses on the body of the uterus are not nervous plexuses."

On the 17th of June, 1811, having obtained all the evidence that multiplied dissections and microscopical observations could furnish, I presented a second Paper to the Royal Society on the Nervous Ganglia of the Uterus, which has been published in the second part of the Philosophical Transactions of the last year with two engravings. In this communication the following account is given of the ganglia and nerves of the uterus, as displayed in these dissections now before you :—

The uterus and its appendages are wholly supplied with nerves from the great sympathetic and sacral nerves. At the bifurcation of the aorta, the right and left cords of the great sympathetic nerve unite upon the anterior part of the aorta, and form the aortic plexus. This plexus divides into the right and left hypogastric nerves, which soon subdivide into a number of branches to form the right and left hypogastric plexus. Each of these plexuses, having the trunk of the hypogastric nerve continued through its centre, after giving off branches to the ureter, peritoneum, rectum, and trunks of the uterine blood-vessels, descends to the side of the cervix, and there terminates in a great ganglion, which, from its situation and relations, may be called the hypogastric ganglion, or utero-cervical ganglion.

This ganglion is situated by the side of the neck of the uterus, behind the ureter, where it is passing to the bladder. In the unimpregnated state it is usually of an irregular triangular or oblong shape, with several lobes or processes projecting from it, where the nerves enter or are given off from it. In the long diameter it usually measures from half an inch to three quarters of an inch, varying in dimensions with the size of the nerves with which it is connected. The hypogastric ganglion always consists of cineritious and white matter like other ganglia, and grey and white nerves issue from it, which proceed to the rectum, bladder, uterus, and vagina. It is covered with the trunks of the vaginal and vesical arteries and veins, and the ganglion has an artery of considerable size, which enters it near the centre, and divides into branches, which accompany the nerves given off from its inner surface and from its anterior and inferior borders. The hypogastric nerve, after separating into a plexus, enters its upper edge, and branches from the third and other sacral nerves to its posterior border and the whole of its outer surface. None of the branches of the sacral nerves pass over the ganglion to the bladder, though some of them enter its anterior edge where the vesical nerves are given off.

From the inner and posterior surface of each hypogastric ganglion, numerous large nerves are given off, which go backwards to

anastomose with the hæmorrhoidal nerves, which accompany the arteries to the rectum, and pass with them between the muscular fasciuli of the organ. An extensive connection is thus established between the two hypogastric ganglia and the nerves of the rectum; and many large broad nerves pass from the posterior and inferior part of these ganglia to ramify on the sides of the vagina, and between the vagina and rectum.

From the inferior border of each hypogastric ganglion several fasciuli of small nerves are sent off, which pass down on the sides of the vagina, and enter several large flat ganglia about midway between the os uteri and ostium vaginae. From these vaginal ganglia innumerable filaments of nerves, on which small ganglia are formed, extend downwards to the sphincter, where they are lost in a white dense membranous expansion, from which they cannot be separated without laceration. From this great web of ganglia and nerves on the sides of the vagina, by which it is completely covered, numerous branches are sent to the sides of the bladder, which enter it around the ureter. All these nerves of the vagina are accompanied with arteries, and they often form complete rings of nerve around the branches of the great veins.

From the anterior margin of each hypogastric ganglion large white and grey nerves are sent off, some of which pass on the outside, and others on the inside, of the ureter, and these branches meet in front of the ureter in a ganglion which may be termed the middle vesical ganglion. There are other two ganglia formed on these nerves—one between the uterus and ureter, and the other between the ureter and vagina. These may be called the internal and external vesical ganglia. The ureter is thus enclosed within a ring of nerve which resembles the œsophageal ganglion in some of the Invertebrata. The trunks of the uterine artery and vein are likewise encircled by a great collar of nervous matter, between which and the hypogastric ganglion several large and some small branches pass.

The internal vesical ganglion, which usually has a flattened or long bulbous shape, is formed entirely upon the nerves which pass from the hypogastric plexus and ganglion, and run between the uterus and ureter. It has an artery which passes through its centre. It first gives off a large branch to the ring of nerve or ganglion which surrounds the uterine blood-vessels: it then sends branches to the anterior part of the cervix uteri, and afterwards a great number of small filaments to the muscular coat of the bladder, where it is in contact with the uterus. The internal vesical ganglion then sends forwards a large branch which terminates in the middle vesical ganglion.

This ganglion sends off a great number of

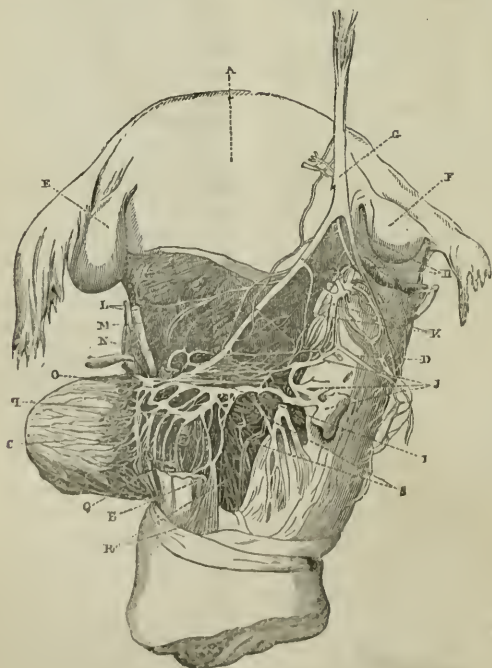
large nerves to the bladder. Some of these accompany the arteries, and can be seen ramifying with them upon the whole of the superior part, even to the fundus. Filaments of these nerves, scarcely visible to the naked eye, are seen ramifying in this preparation on the bundles of fibres occasionally forming loops, and enclosing them, or passing down between them, to the strata of fibres below. Some of the smaller branches of the middle vesical ganglion do not accompany the arteries, but are distributed at once to the parts of the bladder around the ureter.

The external vesical ganglion is formed entirely upon the nerves which proceed from the hypogastric ganglion, and pass on the outside of the ureter. This is a small thin ganglion, the branches of which are sent immediately into the muscular coat of the bladder. It usually sends down a long branch to anastomose with the nerves and ganglia situated on the side of the vagina.

From the inner surface of each hypogastric ganglion numerous small white soft nerves pass to the uterus, some of which ramify upon the muscular coat about the cervix, and others spread out under the peritoneum to coalesce with the great ganglia situated on the posterior and anterior surfaces of the organ, which have been called

the subperitoneal ganglia and plexuses. Large branches also go off from the inner surface of the hypogastric ganglion to the nerves surrounding the blood-vessels of the uterus, which accompany them in all their ramifications throughout its muscular coat. Other branches of nerves pass down from the ganglion between the vagina and bladder. The appearances presented at the end of the fourth month of pregnancy by the hypogastric ganglia, and the ganglia and nerves of the rectum, and also the great plexus of nerves situated on the anterior surface of the uterus, are seen, but very indistinctly, in the two following reduced engravings from the Philosophical Transactions.

But the whole nervous system of the uterus is not fully represented in these engravings, nor are they seen in the dissection from which they were taken. In a third communication to the Royal Society, which was read on the 16th of June, 1842, and which has been published with an engraving in the second part of the Philosophical Transactions of the present year, there are other great nervous structures described and represented. These have been displayed in the dissection of a gravid uterus at the end of the ninth month, all the blood-vessels of which have been injected, which is now placed before you on





the table, and which I am anxious you should carefully examine and compare with the following description. Without looking at the preparation, or this elaborate drawing by Mr. Perry, I am afraid you will not be able to follow the description.

In this preparation the great sympathetic nerve sends numerous branches from both its cords to the trunk of the inferior mesenteric artery, which forms a great plexus around it. These nerves accompany all the ramifications of the artery, but the greater number proceed with the hæmorrhoidal artery to the rectum. The two cords of the great sympathetic, after giving off these branches to the inferior mesenteric artery, pass down before the aorta nearly two inches below its bifurcation, where they are united by several fine nervous filaments. But the cords continue distinct, and soon separating, each passes down behind the hypogastric blood-vessels to the side of the neck of the uterus, and there terminates in the corresponding hypogastric or utero-cervical ganglion. The left cord of the great sympathetic, or, as it is usually called, the hypogastric nerve, en-

larges greatly as it approaches the hypogastric ganglion. This ganglion is nearly two inches in breadth, and covers a great part of the cervix uteri. It appears to consist of six or seven smaller ganglia, which are united together by nervous cords. Each of these ganglia is a thick, solid, nervous mass, of an orange white colour inclined to brown. Arteries which have been injected pass through these smaller ganglia, and accompany the various nervous filaments which proceed from them. Into the whole outer surface of the hypogastric ganglion numerous branches from the third sacral nerve enter; and behind there is a great connection formed between the ganglion and the branches of the hæmorrhoidal nerves. The vaginal nerves arise from the inferior margin of the ganglion, and the vesical from its anterior border. Some of these nerves pass on the outside of the ureter to enter the middle vesical ganglion, and others pass on the inner surface of the ureter to the anterior part of the neck of the uterus.

From the superior and anterior part of the left hypogastric ganglion, a plexus of nerves,

accompanied by an injected tortuous artery, proceeds upward along the whole body of the uterus, close to the trunk of the left spermatic vein, and there terminates in a dense reddish-brown coloured mass, consisting of fibres firmly interlaced together, and which has all the characters of a true ganglion. From its vicinity to the principal spermatic artery and vein, which it partly surrounds, and the ligament of the ovary, it may be called the left spermatic ganglion. Between this ganglion and the left hypogastric ganglion an artery extends, which is closely embraced by a plexus of nerves, and a direct nervous communication is thus established between these remote ganglia. The nerves adhered so firmly to the artery through its whole course, that, before they were separated, they presented the appearance of two white lines on its sides, with filaments crossing over the vessel. From these nerves extending between the left hypogastric and spermatic ganglion, branches, with arteries, are given off in their whole course to the subperitoneal ganglia and plexuses on the posterior surface of the uterus; and also branches to the plexuses on the anterior surface.

On approaching the spermatic ganglion, these nerves with their artery pass under or between the branches of the *left subperitoneal plexuses*, and frequently communicate with them by fine nervous filaments. The artery can be readily traced through the substance of the spermatic ganglion, but the nerves which accompany it from the hypogastric ganglion immediately disappear on entering the mass. Numerous large branches of nerves from the *left subperitoneal plexus* likewise terminate in the left spermatic ganglion; but some of them pass under it, and proceed to the round ligament; and others are continued upward, gradually diminishing in size as they approach the renal plexus along the spermatic blood-vessels. From the upper border of this ganglion large flat nerves proceed to ramify on the fundus uteri, and pass with the vessels into the muscular coat. The trunk of the spermatic vein and artery is almost completely surrounded with this ganglion, as the uterine and vaginal arteries and veins are enclosed within rings of nerve connected with the hypogastric ganglion.

In this dissection there are nervous structures displayed on the anterior and posterior surfaces of the uterus of still greater magnitude. These, from their situation, may be called the *subperitoneal ganglia and plexuses* of the uterus.

Over the middle of the lower part of the body of the uterus behind, immediately beneath the peritoneum, is situated the posterior subperitoneal ganglion, which is considerably larger than the left hypogastric ganglion. It presents the appearance of a layer of dense

structure, composed of fibres strongly interlaced together, having a yellowish-brown colour. It adheres firmly to the peritoneum; but, between its lower surface and the muscular coat of the uterus, there is interposed a thick soft layer of cellular substance, through which filaments of nerves, and branches of considerable size, pass to the muscular coat of the uterus. The middle part of the ganglion is more than two lines in thickness, but it becomes everywhere thinner towards the circumference, and particularly at the inferior border, where it sends off many nerves to the back part of the vagina. From its left lower and lateral part it sends off two layers of broad nerves, one of which adheres to the peritoneum, and the other closely invests the muscular coat and blood-vessels of the uterus. Between these layers there is placed a very thick mass of soft cellular membrane, through which innumerable branches of nerves pass between these layers; the hypogastric ganglion, and the plexus of nerves, with the injected artery, extending between the hypogastric and spermatic ganglia. Many of the superficial nerves pass down under the peritoneum, and terminate in the upper border of the left hypogastric ganglion; and upon these superficial nerves there is formed another ganglion of considerable size, between which and the hypogastric nerve numerous branches of soft nerves extend. This ganglion, formed on the nerves under the peritoneum near the edge of the uterus, is thick and solid, and consists of a yellowish-brown substance, with white nervous filaments interlaced, and arteries of a considerable size passing through it. From its lower border large nerves extend to the upper edge of the hypogastric ganglion, and innumerable soft nerves enter the whole inner surface of the hypogastric ganglion, which take their origin from the lower part of the great subperitoneal ganglion. The upper part of this ganglion becomes firmly adherent both to the peritoneum and muscular coat of the uterus, which it covers as high as the fundus. Large broad nervous plexuses, superficial and deep, extend from the upper portion of the subperitoneal ganglion across the body of the uterus to the spermatic ganglion and blood-vessels, and the round ligament, around which they form a sheath of nerves.

As the arteries and veins on the right side of the uterus are only partially injected, the nerves extending between the hypogastric and spermatic ganglia have not been so minutely traced. But that there is a similar nervous chain, connecting these great ganglia of the fundus and cervix and the subperitoneal ganglia and plexuses, does not admit of doubt, and has been demonstrated by other dissections upon the table, at an earlier period of pregnancy.

Over the middle of the anterior and lower

part of the uterus, there is situated a nervous and vascular mass of great extent, and similar in structure to the subperitoneal ganglia described on the posterior surface. It adheres to the peritoneum firmly; but, on being divided longitudinally, it is also observed to be separated from the muscular coat of the uterus by a soft stratum of cellular membrane. From the lower part of this *anterior subperitoneal* ganglion, nerves are sent down to the cervix uteri and vagina, and numerous branches pass off on both sides to the hypogastric ganglia. Superficial and deep plexuses of nerves are likewise sent off from its superior lateral borders, which proceed across the uterus, sending branches into the muscular coat, and uniting with all the ganglionic plexuses on the posterior surface. The appearances presented by the anterior subperitoneal ganglia and plexuses in the fourth month of pregnancy are seen in this preparation [exhibiting it] and in this drawing. At this period, it seems nothing but a thin, nervous, and vascular membrane, imbedded in soft cellular substance, through which the delicate nervous filaments, accompanied with arteries, proceed to the superior angle of the uterus. On comparing these ganglia and plexuses in the fourth and ninth months of pregnancy, it is impossible to avoid being struck with their enormous development during the latter months of pregnancy, or to resist the conclusion that these great nervous structures are formed for the purpose of supplying the uterus with that nervous power which it requires during labour.

These dissections prove, as was observed in the first lecture, that the human uterus possesses a great system of nerves, which enlarges with the coats, blood-vessels, and absorbs during pregnancy, and which returns after parturition to its original condition before conception takes place. It is chiefly by the influence of these nerves that the uterus performs the varied functions of menstruation, conception, and parturition; and it is solely by their means that the whole fabric of the nervous system sympathises with the different morbid affections of the uterus. If these nerves of the uterus could not be demonstrated, its physiology and pathology would be completely inexplicable.

ON STRANGULATED HERNIA IN INFANTS.

To the Editor of the Medical Gazette.

SIR,

IN your number for December 9th, you have reported a case in which I have recently operated for strangulated

hernia on a man (named Pouché) at the advanced age of 107, and I am glad to say that he has continued well since that time, with the exception of a little suppuration between the skin and the hernial sac, which required a part of the wound to be reopened.

I suppose there can be little doubt that this is the greatest age at which this operation has been performed, but it would be a curious coincidence if the same individual should also have operated at the earliest period also; I do not know, however, that any surgeon has been obliged to perform the operation at so early a period as seven weeks, at which time I have known it necessary, in order to save the child's life, and I will take the opportunity of your having noticed my late operation in your journal to place the other also on record, from the notes of my clinical clerk.

Charles Tunstall, æt. 7 weeks, was admitted into St. George's Hospital, Feb. 21, 1840, with oblique inguinal hernia, which had been strangulated two days, during which time there had been no evacuation. The child had constantly vomited when put to the breast, and the countenance was pallid and sunk, and expressive of severe suffering. The tumor was of considerable size for so small a child, and tense, though not externally inflamed. Attempts had been made to reduce the tumor before the child's admission, with the assistance of a warm bath: castor oil had been administered, and one leech applied. The mother was not aware that the hernia existed at the time of birth, but she had observed the child cry whenever the part had been washed or touched.

It was obvious that no time could be lost, and I immediately performed the operation, and returned the intestine, which was little inflamed; the sac was very thick, and contained a good deal of fluid.

An evacuation took place an hour after the operation, and the next day, February 22nd, there had been no return of sickness, and though the child refused the breast it had taken a little arrow-root; the countenance was also improved; the tongue moist, and the pulse had tolerable force, though it was rather slow and irregular; the abdomen was soft, but pressure made the child cry. Relief was given by a chamomile poultice.

23d. — This tenderness had gone, and the child again sucked readily, and the wound looked healthy.

On the 25th I was rather anxious on account of the urine, which had made the wound tumid and inflamed; the sloughing was confined, however, to the cellular membrane and the outer part of the sac, and the wound afterwards healed well.

I saw the child a few months ago, at which time a considerable sized hernia existed under the cicatrix.

I have reason to believe that an opinion is commonly entertained by medical men that hernia is attended with little danger in infants; but although, doubtless, not so liable to strangulation as in older persons, the opinion leads to grave errors in practice, if it is neglected. On this account I conceive it is the right practice to endeavour to obliterate the canal at the earliest period by the gentle pressure which can be applied in the youngest infant by the common belt and pad, and under-strap, or by a small spring truss:—

1st. Because strangulation may take place, as in the case above related, so as to require an operation, which might probably have been prevented, if pressure had been used to keep the bowel up. In two instances I have seen strangulation at the early period of three weeks, and in one of these cases reduction was effected with much difficulty by means of ether dropped constantly on the tumor for about an hour and a half: there was much sickness in this case, and a good deal of tenderness of the tumor, and it was clear that I could not have delayed the operation very long. In another case an operation was performed by another surgeon of the hospital, in a child about two years old, but it was followed by fatal inflammation.

2nd. By using pressure at an early period, the surgeon takes advantage of the natural disposition to obliteration of the canal, which exists at the time of the descent of the testis, so that a cure may be effected in four or six weeks, which will require as many months at a later period; and,

3rd. The difficulty of the cure is very much increased by the enlargement of the canal from frequent protrusion [of the bowel. A few months ago, I was consulted by a lady, whose child was ten months old, with a hernia of three

months' duration, which had increased considerably in size, and was very difficult to keep up by a truss: she had been advised by a provincial surgeon of much repute to do nothing for the hernia, but as her usual attendant saw it increasing, I was written to on the subject, and I think much trouble might have been saved if a truss had been used as soon as the hernia had been discovered.

Some countenance is supposed to be given to the common opinion, by the authority of Sir Astley Cooper; who does not, in fact, however, recommend this delay, except in the few cases in which I should agree with him in postponing the treatment; viz. in cases in which the testis has not descended into the scrotum, but lies in so inconvenient a position in the groin, as to prevent the application of a truss. Even in these cases, however, attention should be paid to the further progress of the testis, so that the pressure may be delayed, not to the time of puberty, but only to the earliest period at which this gland may happen to have descended low enough to allow the truss to be used.—I am, sir,

Your obedient servant,
CÆSAR HAWKINS.

26, Grosvenor Street,
Dec. 16, 1842.

SOME OBSERVATIONS
ON THE
INORGANIC CONSTITUENTS OF
ORGANIC BODIES,
AND ON
THE EXHIBITION OF IRON.

By J. BOWER HARRISON, M.R.C.S.L.
Surgeon to the Ardwick and Ancoats Dispensary.
(For the London Medical Gazette.)

IN the MEDICAL GAZETTE for the 4th of September, 1840, I published some observations on the inorganic matter contained in the blood. I made especial reference to the iron in the blood, because I conceived it was connected with a practical application, and because the value of ferruginous preparations is generally admitted. I have since carefully reviewed my opinions, and been favoured with some communications from professional friends. I am now anxious to offer a few further remarks on the same subject, which

may serve to render my views more intelligible and explicit. My principal object is to insist on the importance of the fact, which has of late been established by chemists, that the inorganic matter, which was formerly supposed to be incidental and foreign, is, in reality, necessary to the composition of organic bodies; and to make some pathological deductions of a practical nature.

The manner in which these elements exist in organised bodies is not perfectly ascertained. Some inorganic bodies evidently pass in and out of organised bodies without suffering any change, and may, therefore, be properly regarded as incidental. Others form the bases of acids; and it does not seem material what these are, so long as they are capable of combining with the same equivalents of oxygen, and forming salts with the acids. Again, there are some minute traces of mineral bodies, which appear to form a component of organised structures in a state in which they are never otherwise found; and these probably give a character to the compound in a way which is peculiar; for the particular mode of combination in which the elements of organic bodies are supposed to exist may give occasion for the interposition of some disposing attractions. "In mineral substances," says Professor Müller, "the elements are always combined in a binary manner: thus, two elementary substances unite together, and this binary compound unites again with another simple substance, or with another binary compound. For example, carbonate of ammonia is constituted of carbon, oxygen, hydrogen, and nitrogen, combined as follows:—carbon and oxygen unite to form carbonic acid; hydrogen and nitrogen unite to form ammonia; these again unite to form carbonate of ammonia. In minerals the elementary substances are never observed to combine three or four together, so as to form a compound in which each element is equally united with all the others. This, however, is the case in organic bodies. Oxygen, hydrogen, carbon, and nitrogen—the same elements which, by binary combination, formed inorganic substances—unite together, each with all the others, and form the peculiar principles of organic beings*." I may

suggest that the union of all the elements equally with one another is determined by a kind of disposing affinity given to the compound by exceedingly minute portions of mineral substances. It is possible to conceive that, by this means, there is produced a suspension of those more elective affinities which would resolve the whole into binary compounds. The common relation of all the elements to these substances may bestow, under the control of the vital agency, the particular character they acquire as organised bodies. The combination of inorganic or mineral bodies with the oxygen, hydrogen, and carbon, of organised bodies, seems especially inimical to that state of molecular arrangement which is termed crystallization. No organic principle during life is capable of crystallization, and this property seems to be dependent on these so-called foreign ingredients. Dr. Prout states that starch and sugar are nearly identical in their chemical nature; and yet the former, owing to the presence of foreign matter, is incapable of being crystallised*. Fat approaches nearly to the state of a crystal: it is a curious fact, "that the fattening of an animal is rendered impossible when we add to its food an excess of salt, although short of the quantity required to produce a purgative effect†." The property which inorganic matter possesses of preventing the crystallization of the molecules, must of course be communicated to the molecules themselves, but is yet ascribable to the ingredients to which we have alluded. It is likewise to be borne in mind, that the combination and arrangement in which these mineral bodies exist serves to prevent their coming into contact and forming crystals, in which way they would otherwise undoubtedly collect and aggregate. They thus seem (if I may be permitted to use the expression) to forego, as well as to forbid, crystallization. Since inorganic matter is found to be essentially necessary to the constitution of organised bodies, it will be anticipated that particular species of plants can only find sustenance on those soils which contain the requisite kinds of minerals. It is true that some of the inorganic constituents of plants are altogether acci-

* Physiology, page 3.

* See the Philosophical Transactions for 1827.
† Liebig's Animal Chemistry, page 155.

dental, but others are absolutely essential and invariable. There are some which can only be dispensed with when they are replaced by bases which are capable of forming similar combinations, and uniting with the same equivalents of oxygen. "The perfect development of a plant," says Dr. Liebig, "is dependent on the presence of alkalies or alkaline earths; for when these substances are totally wanting its growth will be arrested, and when they are only deficient it must be impeded. In order to apply these remarks, let us compare two kinds of trees, the wood of which contain unequal quantities of alkaline bases, and we shall find that one of these grows luxuriantly in several soils upon which the others are scarcely able to vegetate. For example, 10,000 parts of oak wood yield 250 parts of ashes; the same quantity of fir wood only 83; of linden wood, 500; of rye, 440; and of the herb of the potatoe plant, 1500 parts. Firs and pines find a sufficient quantity of alkalies in granitic and barren sandy soils, in which oaks will not grow; and wheat thrives in soils favourable for the linden tree, because the bases which are necessary to bring it to a complete maturity exist there in sufficient quantity. The accuracy of these conclusions, so highly important to agriculture and to the cultivation of forests, can be proved by the most evident facts*."

In animal bodies there is the same necessity for inorganic and mineral constituents, and they are accordingly found to exist in like manner as they do in vegetables. The waste which goes on in the animal body is attended by the constant loss of these substances, as well as of others; and this is evident by their being found abundantly in the urinary secretion. It is indispensable, therefore, that they should be continually renewed; and they are, on this account, constantly being introduced in combination or admixture with animal and vegetable proximate principles, in the food which is taken into the body. It would appear from the researches of Dr. Liebig, that the various animal and vegetable proximate principles merely require a *change of form* to be adapted to the nutrition of the body. Animal and vegetable albumen, fibrine, and casein,

contain the precise ingredients which are necessary for the composition of the animal tissues. But the mere existence of these principles obviously does not constitute healthy animal structure. There is a process of organization wanting, which is dependent on life, and requires a further combination of circumstances. There are other substances taken into the blood which have an influence on the metamorphoses of these principles, and exercise a definite influence on the arrangement of the molecules. We know that the various structures are intimately brought into contact with the blood, with which they are in a perpetual state of interchange; and we further know that there exists in the blood, globules which do not seem to take any direct part in the nutrition of the body. These may be carriers of oxygen, but they may also be agents of organization, and serve to give a definite polarity to the tissues which are forming from the blood. In short, in addition to the proximate principles which supply matter for immediate conversion into fibrine, albumen, &c., we find in animal and vegetable foods other constituents which are also necessary. These constituents must vary, in some degree, with the different articles which we have chosen for consumption; for we have already seen that vegetables receive them differently according to their particular constitution, and the election of soils to which they consequently disposed. Many of them cannot, therefore, be essential, and must be discharged from the body without their having suffered or produced any alteration. It may be conjectured, however, that a certain proportion of these inorganic bodies conduces to the health of the body. It would seem probable that what is called the tenacity of the animal tissues may depend, in some measure, upon the presence of a due admixture of these substances. We know that when there is a deficiency of good wholesome food, especially of good red flesh meat, which contains abundance of these constituents, that there is induced a pale and serous state of the blood, which seems incapable of forming healthy organic structure. There seems to be a semi-transparent, and, as it were, crystalline character of the tissues, as though the mineral elements were insufficient to produce

* Liebig's Organic Chemistry, page 104.

a proper proportion of healthy tissue. I may illustrate this position, somewhat coarsely, but perhaps forcibly, by comparing the animal structure, in this state, to mortar which is devoid of a proper admixture of sand to give it a due consistence. In such cases it would appear rather as if the body were an assemblage of badly organised proximate elements, than of real healthy structure with its proper vital cohesion.

In some instances a remedial influence may be accomplished by the administration of various medicinal substances in combination with a carefully regulated diet. It would be a great abuse of chemistry to apply it too rigidly to medicine, and we ought always to regard with great suspicion any purely chemical explanation of physiological phenomena. When we find, however, that a particular effect may be brought about by certain means, the manner in which it is effected becomes a legitimate object of inquiry. Now the exhibition of iron appears to be really serviceable, and to have a direct influence in augmenting the number of the red particles of the blood. It may be imagined that the iron enters into combination with a principle similar to fibrine, constituting, in combination, the crurin, or colouring matter, with which the envelope of the blood-particles is impregnated. There appears to me nothing improbable in such a supposition; but however this may be, the effects of iron in multiplying the number of the red particles is generally admitted by the profession. The following extracts from Andral's Pathology, if superfluous, may not be altogether unacceptable; they are themselves quotations from the *Dictionnaire de Médecine*. They relate to a remarkable state of anæmia which occurred to some workmen employed in one of the galleries of a coal-mine in Auzain. In these instances the countenance lost all colour and complexion, and presented an appearance similar to that of wax which had been tinged yellow by the influence of time; the blood-vessels were so completely effaced that not a trace of them could be discovered even in those regions where they are generally most apparent; not a single capillary vessel could be seen on the conjunctiva of the eye or eyelids, or even in the mucous membrane of

the mouth; and the pulsation of the arteries was so feeble as to be scarcely perceptible. "The patients all complained of excessive debility, great anxiety, frequent palpitations, and sense of oppression and suffocation on making the least exertion; they had constantly profuse sweats; their countenance was œdematous; their appetite good, but digestion much impaired; and their emaciation advanced with rapid strides. This state sometimes lasted for six months or a year, and in some cases terminated in death." Various remedies were tried without avail; light bitter infusions, with nutritious diet, and antiscorbutic wine, proved of no service. Mercurial frictions were also made use of. "During this treatment," continues the account, "one of the patients died. On dissection, all the arteries and veins were found void of blood, and containing only a little serum; no blood flowed when the muscles were divided, except on the thigh, from the large muscles of which a few drops issued. This almost total absence of blood, which agreed so well with the phenomena observed during life, induced M. Hallé to discontinue the mercurial frictions, and substitute the internal use of *iron filings* in the dose of a drachm daily, combined with tonics and opium. In eight or ten days an evident improvement had taken place in the patients thus treated; a few veins began to appear under the skin of the fore-arm; the digestion was much improved; and the dyspnœa considerably relieved. Each subsequent day the patients pointed out as a new discovery one or more blood-vessels which had just become visible: all their symptoms continued to improve, and at the time they were sent home their health was perfectly established."

There can be no doubt that a state of anæmia is the precursor of many serious lesions, nor is it always fair to regard it as a secondary affection in itself. To an anæmical condition of the system may be attributed many of those cases of simple dilatation of the heart which have arisen in a defective tonicity of the muscular fibre. It is well known that the heart, in combination with the other tissues, may lose its proper firmness, and without the existence of any valvular disease may suffer dilatation from the ordinary and temporary im-

pediments to which the circulation is habitually subjected. The *vis a tergo* of the circulation, instead of pushing forward the current of the blood, spends itself, in some degree, in dilating the parietes of the heart, and this condition, unlike that which originates in valvular obstruction, is not attended with any accompanying hypertrophy, but a great attenuation of structure. The resemblance, in the appearance of the complexion, of this disease to that called chlorosis, is not a little striking, and in both there is probably something analogous in the condition of the blood. Dr. Elliotson, speaking of the latter complaint, in the lectures which he delivered at University College, observes, "When I come to treat of diseases of the heart, you will find an affection similar to this. Persons will have violent palpitations, and become pale; and this state is not one indicative of bleeding and purging, which, in a complaint like this, would make things worse; but, very much to my surprise, when I first ventured on practice, I found iron would remedy this morbid condition of the system to some extent." It is not to be wondered at that the menstruation should be defective when the blood is so much impoverished, and yet people always regard the deficiency of that secretion as the cause, and not as the consequence, of the malady. The other day a poor woman presented herself at the Aneats Dispensary with a large sloughing ulcer on the leg. She was of a pale œdematous appearance, and was suckling a child about eighteen months old. On remonstrating with her on the subject, she replied that she suckled it because she had not any food to give it! This young woman had a dilatation of the heart. She told me that the menses were sparing and pale, and to this she attributed her illness. I will not offend the reader by a word of comment.

In my former paper I alluded to the possible connexion of tuberculous formations with a deficiency of the inorganic matter of the blood. This was designed as a mere suggestion, and in no way involved any peculiar line of practice, which is always to be deprecated if based merely on theory. I do not know that I have been strengthened in this opinion by subsequent reflection—tuberculous formations are at least

obviously promoted by whatever depresses the energy of vitality.

I shall now briefly conclude by a few observations on the mode of exhibiting iron. In the first place, in the administration of iron, a speedy result should not always be anticipated. Invalids are generally impatient if they do not receive immediate benefit from the medicines prescribed. It would be well to inculcate, therefore, that the iron is rather to be considered as an adjunct to the food than as a common medicinal agent. It is not to produce a revolution in the system, but to afford materials which may conduce to the nutrition and organization of the body. It should not therefore be hastily thrown aside after a trial of a week or a month, but where the indications for its administration are still persistent it may be continued with advantage for a protracted period.

The form in which it is to be given must of course vary according to the particular nature of the circumstances, and must be altogether dependent on the discretion of the practitioner. Dr. Elliotson advocates the use of the tartarised iron in cases of dilatation of the heart, chiefly on account of its diuretic and purgative qualities; at any rate, it may be elegantly combined with medicines to promote the action of the kidneys and bowels. For the same reason, for young subjects the *vinum ferri* (which I see is omitted in the last edition of the *Pharmacopœia*) would be found a useful medicine. Probably some improvement in the mode of administering metallic preparations may be eventually adopted. In the meantime, the following quotation from Professor Müller's *Physiology* may not be considered uninteresting. "If a small quantity of a metallic salt is mixed with serum, and a rather larger proportion of caustic potash added than is necessary for the decomposition of the metallic salt, the oxide is not precipitated, but remains in solution combined with the albumen. Berzelius, who mentions this, remarks that by this means metallic salts, or oxides, are absorbed from the intestinal canal or skin, carried into the circulation, dissolved in the serum, and expelled with the excretions; and hence it is that after the continued use of mercury, we find the protoxide dissolved in the fluids of the

body. Would not the extremely intimate combinations of the metallic oxides with albumen be useful in medicine? Albumen of the egg or serum coagulates when mixed with concentrated solutions of earthy or metallic salts, and the coagulum contains the components of the salt."

ADOPTION OF A COLLEGIATE DISCIPLINE AT ST. BARTHOLOMEW'S HOSPITAL.

To the Editor of the Medical Gazette.

SIR,

PERMIT me through your pages to express my sincere satisfaction that at length some decided step has been taken towards the adoption of a collegiate system of discipline in one, at least, of our medical schools. The governors of St. Bartholomew's Hospital have deserved well of the profession, and of the country, for taking the initiative in this great work of hospital reform. From a long acquaintance with medical students, I am persuaded that, if properly arranged and conducted, the plan is certain of success, and that when once fairly started by one of the schools, the rest must perforce follow in the same track. At the same time it must be allowed that this is no light matter—that the introduction of a system so entirely new, as regards not only our London schools, but the medical schools of the whole Empire, and indeed of all Europe, and making considerable demands upon the patience, forbearance, and good sense of a number of young men who are just at the age when these qualifications are yet but in the bud; calling upon them, for a prospective advantage, to allow the curtailment of that present liberty which they have always been accustomed to look upon as their right—I say, such an undertaking must require on the part of its conductors a considerable share of prudence, caution, and zeal, and will doubtless at first meet with no slight opposition. I must beg to be permitted to suggest, that the success or the failure of any plan of the kind in question must necessarily rest upon this question—What is proposed to offer to the students as an inducement to them to place themselves in the condition of restraint now proposed? Two

things are obvious: first, that it is impossible, with any prospect of benefit or of success, to adopt the plan of collegiate establishment by halves. It will be useless to make merely a set of lodging houses, which the student may enter or leave at his option, and within no boundary walls, with no regulated system of restraint; such a plan necessarily leaves out the very fundamental principles of collegiate life. Secondly, it is as evident, that supposing a college establishment duly provided, it will be impossible to render a residence in it compulsory upon all the students of the school; such an assumption of authority would at once defeat its own object, and drive away those whom it was intended to benefit. Some strong inducement, therefore, must be held out to tempt the young man to resign that entire liberty of action which he is generally inclined to prize far above its real value. In order also to have full weight with him, this inducement must not be too prospective. He must be shewn that there are advantages of an immediate and palpable nature, which are to be had at least in an equal degree under no other system than the proposed plan. The mere diminution of expense, or the improvement in his accommodation, (if these can be offered by a college) will be of little avail in inducing the majority of students to come within its rules. These points are matters of little moment to many, and to all would hardly outbalance the sacrifices they must make.

Great as are the advantages which are certain to result to the student from a wholesome system of discipline, I know but of one which a college can offer, so palpable in its nature, so immediate in its operation, and at the same time so exclusively collegiate in its character, as to offer a striking and powerful temptation to a young inexperienced man. This consists in a well-modelled system of college tutors. Here he would, on his first entrance upon his studies, find a friend and adviser, a guide and instructor, in the vast and bewildering field of inquiry which opens before him as he proceeds; his time and attention would be rightly and judiciously directed. He would here at once meet with a functionary whose specific office it would be to devote his time to the furtherance of the students' objects, and in applying to whom,

therefore, he would feel none of that difficulty and delicacy which he must at present experience, in regard to those who are alone competent to advise him, but whose time and attention he is unwilling to tax, by matters which appear trifling to them, but which are of the utmost importance to his early progress.

After considerable thought and attention given to this subject, I cannot but conclude that an efficient system of tutors is the most important portion of the whole collegiate arrangement, partly from its intrinsic value to the student, and partly from the very obvious nature of its advantages, which will at once remove the objections which the young men may feel to submitting to the necessary degree of restraint. Such an inducement may not be so necessary in future years, when the right and wholesome system of discipline is become well known as part and parcel of the London medical schools; but the first establishment of the plan is of the greatest importance, as it is of the greatest difficulty. I will, therefore, now only offer a few suggestions upon this one matter of the tutors; and should these hints appear to have any value, I shall be happy at some future time to extend them to other parts of the college system.

It is obviously necessary that the tutor should be resident in the College; he will thus be at all times accessible to the student, to whom his time must be wholly devoted, and his presence will there create a sensible and wholesome restraint. If the tutor is allowed to reside out of the walls, his usefulness will be materially restricted, and the way be opened to numberless abuses. The tutors might be appointed from among those students who, having passed all their examinations, are still desirous of remaining in the neighbourhood of hospital practice. By this mode of selection, a proper difference of age will be secured between the pupil and his instructor—a point of considerable importance, and an excellent opportunity will be afforded of rewarding meritorious students, and of offering an additional stimulus to their exertions. Not that I would advocate the keeping of the student in leading-strings, or that his industry and energies should be crippled and enfeebled by a want of independent action; but

if twenty-five pupils are allotted to the charge of each tutor, there will, among these, be always plenty in different stages of progress, who will demand his time and attention. Whether, therefore, it may be in the dissecting-room, in the museum, with the specimens of *materia medica*, or at the bedside of the hospital patient, the tutor will be ready to assist, either by examination or by instructions, and the pupil will at once know where to go for whatever assistance he may need. It might be well to connect the office of tutor with that of demonstrator of anatomy, as affording him an additional opportunity of forwarding the studies of those over whom he is placed, and identifying their interests with his own. If this plan should be adopted, the number of assistant demonstrators will be, of course, increased, and their attendance in the dissecting-rooms will only be required for their own little class. In fact, whatever department of studies their classes are passing through, the individual tutor should be expected to accompany and guide them. I would, however, by no means limit the appointment to them, but give every encouragement to other candidates to come forward, by throwing the office open to competition, and by invariably making it the reward of superior merit; the only requisites being talent and moral worth. It will be easy, and perhaps allowable, for the tutors to assist each other, as they do at Cambridge and Oxford, by receiving to an examination or demonstration those students which happen to require assistance on the particular subject of which that one tutor is about to treat. There should be, I conceive, a public demonstrator, whose office should be quite distinct from those of which I am speaking, who might be the responsible controller of the entire dissecting-room, and the instructor of such students as do not reside in College, and to his lot it would fall to deliver the public demonstrative lectures; or the tutors might well take it by turns to fill this important office for a month at a time.

With regard to the remuneration of the tutors I conceive there will be no difficulty. On entering the College, the student will be required, in addition to the charge for his commons, to pay tutors' fees, from eight to ten pounds a year; and if each tutor is allowed to

take charge of twenty-five students, a very handsome allowance will thus be provided for him—an income such as very many talented men would be rejoiced to accept, as a help to their spending a longer time in the study of their profession. It would be very possible to procure tutors upon much smaller salaries, but I conceive it would be much more advantageous to the interests of the student, and consequently of the school itself, that the students should be well paid. The character of the individual College would so very much depend upon these officers, both in regard to discipline, to morals, and professional talent, that it is of the first importance to secure the best men, and to encourage such men to offer themselves, the remuneration should be adequate.

I do not think that I am in any degree extravagant in rating so highly the importance of the office in question. Certainly the estimation in which our medical schools will be held by the public will materially depend upon the character and success of the pupils which leave them; and I know of no means of influencing their character and their progress in learning so effectual as the system for which I am contending.

I have now only to apologise for occupying so much of your space,

And am, sir,

Your obedient servant,

A. T. L. DODD.

Chichester, Dec. 23, 1842.

MEDICAL GAZETTE.

Friday, December 30, 1842.

"Licet omnibus, licet etiam mihi, dignitatem Artis Medice tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

LAST REPORT OF THE HANWELL LUNATIC ASYLUM.

It is pleasant to speak of improvements—to tell of fetters struck off, of misery relieved, of persuasion substituted for force: it is, therefore, pleasant to speak of Hanwell. The account recently published consists of three Reports, the first of which is from the Com-

mittee of Visiting Justices, and is dated Oct. 27, 1842.

It appears that the daily average of patients during the year ending Sept. 30, 1842, has been 953; when the improvements are completed the Asylum will hold 1000. The house cannot conveniently be extended beyond this size, in the opinion of the Committee, without becoming too large in proportion to the magnitude and number of the airing-courts and day-rooms, and the accommodation afforded in the kitchen, &c. Yet even this magnificent hospital, with its thousand patients and hundred attendants, will be insufficient for the wants of the metropolitan county; three hundred lunatics will be left to pine in workhouses, or private asylums, and to regret that Hanwell is too full. For it is certain that the more Hanwell is known, the less will these other receptacles be liked:

Quo plus sunt potæ, plus sitiuntur aquæ.

The Hanwell dietary appears judicious, but might admit of some improvement. The breakfast for men is composed of milk thickened with oatmeal and flour, and six ounces of bread; for women, of a pint of tea with five ounces of bread, and half an ounce of butter; and four ounces of sugar a week. The dinner is the same for both sexes. Four days a week it consists of five ounces of meat, four ounces of yeast dumpling, and vegetables; twice a week of a pint of soup and six ounces of bread; once a week of twelve ounces of meat-pie crust and an ounce and a half of meat; with half a pint of beer at every dinner. The use of tea at breakfast, and bread at dinner, is so general in England, and so universal in this county, that we should be inclined to censure the omission as a defect.

Supper consists of bread, cheese, and beer for the men, and porridge and bread for the women; while workmen

and laundrywomen have some extra indulgences.

Of 390 men who were in the Asylum on the 30th of last September, 218 were employed, and 104 of them in the garden and agriculture; of 546 females, 406 were employed, and 234 in needlework.

A list of the clothing made at Hanwell during a twelvemonth occupies nearly a page; aprons and bedgowns, shirts and trowsers, sheets and towels, nay, shrouds and caps, are all to be found in this comprehensive catalogue. The washing, too, of the establishment (what buckbaskets can be big enough to hold the wash of 1051 persons?) is performed by the patients, with the assistance of four laundresses. But we have lingered long enough in the vestibule; let us now enter the temple itself, and listen to Dr. Conolly.

During the year ending Sept. 30th. 1842, fifty patients were discharged cured. Their ages varied from 15 to 75, and the duration of the disease from three months to twenty-four years. The deaths during the same year amounted to 91: of these "about forty were from general debility, or paralysis; eighteen were occasioned by apoplexy or epilepsy; and fifteen from pulmonary consumption; leaving a mortality of only twenty from various diseases, accidentally, or less frequently, associated with insanity."

Although patients at Hanwell, like other lunatics, are generally exempt from epidemic fever, they are not equally free from autumnal cholera or diarrhœa. Cases of these affections were numerous last summer and autumn in the Asylum; but they carried off only one patient, a woman of sixty. Among the fifty cases of recovery mentioned, sixteen were patients whose insanity had been occasioned by intemperance. "Patients of this description," says Dr. Conolly, "begin

to mend from the day on which they are admitted; and too often begin to relapse from the day on which they are discharged."

During the last year, there have been four cases in which food was obstinately refused for a time; in two of them the stomach-pump was used. In one instance of refusal, the patient "was formerly a governess, and is remarkable for benevolence of disposition: finding herself surrounded by so many poor people, she refused food, because she thought they must be in want of it."

In one instance, a man, who was admitted in a very miserable state, was induced to eat by a device of Mr. Clift, the assistant steward. He sat down opposite the patient, and began eating cake. The latter looked on, and finding himself apparently unnoticed, asked for some likewise, and ate it with much satisfaction. He afterwards took his ordinary food. "Upon the whole, all additional experience strengthens the resident physician's unfavourable opinion of instrumental means in such cases. Their advantage is limited to a small number of them; they have an unfavourable influence on the patient's mind when often resorted to; and their employment is by no means free from danger in weak and violent patients."

"What is to be done with suicidal patients?" is the triumphant question of those who still adhere to the system of restraint. The Hanwell answer is, treat them with kindness, and you will lessen the disposition; watch them with diligence, and you will render its accomplishment almost impossible.

Nine patients made attempts, several of them repeated ones, at self-destruction; but not one was successful. And since the severest restraints of the olden time have often proved ineffectual, the new system may challenge scrutiny on this score.

Nay, we would go farther, and would affirm that if the life of a single maniac is to be purchased by the misery of a hundred—if the enjoyment of existence and the hopes of recovery are to be diminished to a hundred patients with suicidal inclinations, in order that one lunatic the more may be coerced into existence, and be kept chained on the brink of destruction—the advantage is obtained at too high a price: more *surveillance*, if you please, but no strait waistcoats.

The airing grounds and courts continue to be improved; and every court, except those attached to the refractory wards, has been turned into a garden.

“Those who have had the most frequent opportunities of seeing the insane in the barren and dismal courts and yards usually allotted to them for exercise in asylums a few years ago, can best appreciate the advantage of the present arrangements. The inducement offered by them to the listless and melancholic, to walk out of doors, is found to be in itself a valuable effect of these changes. To some of them, the large rocking-horses, so constructed that five persons can ride safely on each at one time, and one or two of which are supplied to each airing court, offer the means of amusement, exercise, and, it may almost be said, of an alleviation of their malady; some of the patients evidently forgetting their troubles and irritations when taking this kind of exercise, and some being rocked thus to sleep.”

Several entertainments have been given to the patients during the year. On New Year's eve, about 300 women had their annual festival in one of the wards; and among these were nineteen who had formerly been almost always in restraint. This year the men also had an entertainment. Two hundred of them were regaled with coffee and cake, singing, music, dancing, and a hot supper, with a certain portion of beer and tobacco. *All behaved well.*

The effects of such festivals, says Dr. Conolly, far from being transient, blend themselves with the best parts of moral management, and contribute to secure the confidence of the insane.

The instruction of the patients, a recent improvement, goes on with vigour and success. A hundred and twenty patients on each side of the house reap the benefit of this benevolent experiment. Some, of course, were of very feeble understanding; yet, even of these, several evinced pleasure when an attempt was made to teach them.

“One poor epileptic boy learned all the letters in about ten lessons. Others of very unpromising appearance, were found able to repeat the Lord's prayer; and they did this with folded hands, and in a manner showing that the recollection of some early lessons was not wholly effaced.”

The Adelaide Fund for affording relief to the patients who are discharged cured, has proved of signal benefit.

The system of non-restraint so happily transplanted from Lincoln to Hanwell still flourishes and bears fruit. If it is a subject of just exultation to the French, that Pinel abolished the use of chains at the Bicêtre, and first emancipated lunatics from the reign of terror, we may boast that the scholars can now instruct their teachers, and return the lessons of philanthropy with rich usury. Dr. Crommelinck has lately sent in a report to the Minister of the Interior, in Belgium, on the lunatic asylums of England, France, and Belgium, clearly showing the superiority of our own*.

The appearance and general state of

* De la comparaison que le docteur Crommelinck établit entre ces établissements, il résulte une telle supériorité pour les hospices d'aliénés d'Angleterre, que nous n'avons pu voir sans peine combien la France, qui la première brisa les chaînes de ces infortunés, se trouve déjà en arrière de l'Angleterre pour le nombre, l'adaptation, la disposition intérieure et la tenue des hospices d'aliénés.—*Gazette Médicale*, Dec. 3, 1842.

the patients in the wards of Hanwell, the order, activity, and cheerfulness, which pervade the Asylum, and the rapid subsidence of the wildness of new patients, are all alleged by Dr. Conolly as proofs of the superiority of the gentle plan of treatment. It occasionally happens that patients are brought into the Asylum in severe restraints. They are immediately set free; nor is the restraint ever put on again; yet the patients remain quiet.

In one of the remarkable cases narrated by Dr. Conolly, "a delicate girl, of small stature, and epileptic, was brought to the Asylum in close restraint, her wrists and ankles marked with iron hand-cuffs and leg-locks." The warm bath and the removal of restraints restored her to ease and content. In her tranquil state, her expressions were those of gratitude and affection; but during the maniacal excitement which accompanied her epileptic fits, her past impressions predominated, and she often fell on her knees and entreated that no one might be allowed to come and tie her down. She has now been managed for five months entirely without restraints.

What was once an experiment is now a successful system, and the wards of a lunatic asylum need no longer be a place of terror to the most sensitive visitor. Kindness, which performs miracles everywhere, which, like the sun in the fable, penetrates those rugged coverings that wind and storm did but apply more closely—kindness is the "open sesame!" to the heart of the insane, and is a therapeutic agent at once to body and mind.

Among the asylums where the new system reigns, Dr. Conolly mentions those of Lincoln (where it originated), Northampton, Stafford, Gloucester, and the Royal Naval Hospital at Haslar. In other asylums where restraints are

not wholly discontinued they are rarely resorted to; this is the case at York, Ipswich, Dumfries, Belfast, Clonmel, and several in the United States.*

Last, not least, we must mention the clinical lectures given at Hanwell last year by Dr. Conolly. In these practical discourses he showed the instruments of restraint formerly employed, and taught the mode of treatment without them in every variety of mental disorder. Let us hope that next year the Committee will allow the class to be larger; the distance from London is not great; if permission is but granted, the zeal of students, and the Great Western Railway, will do the rest.

The account of the Chaplain is also satisfactory; but the engrossing interest of the Report is to be found in the communications of the Resident Physician. *L'état c'est moi*, said Louis XIV: Dr. Conolly is Hanwell.

MEDICAL LIBEL.

BEALE *v.* SELF.

THE plaintiff and defendant in this cause, which was tried in the Court of Common Pleas last week, are both practitioners residing in Stepney.

The defendant had asserted that the plaintiff had improperly treated one Mrs. Neck, and also that he was a dissecting-room beadle.

And first, of the first.

Mr. Beale attended Mrs. Neck, the wife of a schoolmaster, and she died after an illness of nine days, during

* Apropos of non-restraint, we may mention a controversy on this subject which has lately raged in the Times, between Alpha (conjectured to be a certain learned serjeant) and Mr. Hughes Hughes. Alpha asserts the intolerable condition of a pauper lunatic asylum at Crisbrooke, in the Isle of Wight, which Mr. H. H. as flatly denies. On explanation, it turns out that Alpha's description applies only to the asylum as it was in 1840, since which much has been amended. The impartial by-stander might probably add that much remains to amend, as the system of non-restraint does not appear to be carried out there. Fortunately this asylum does not contain, at present, much more than half the number of patients whom it is licensed to receive.

which the symptoms were somewhat obscure. On a post-mortem examination, it was found that "a portion of the smaller intestines were twisted or strangulated to the extent of about six inches, and this part was approaching to gangrene."

Mr. Self, on the termination of the case, asked the husband if leeches had been used; and on hearing that six had been applied, answered that there ought to have been at least forty or fifty.

This is the chief part of the evidence regarding Mr. Self's opinion of the treatment of Mrs. Neck; but his belief that Mr. Beale was not a surgeon was repeated more than once. Thus it appeared, from the evidence of Mrs. Burt, that she had formerly employed Mr. Self, but, in compliance with the wish of her father and friends, had engaged Mr. Beale to attend her in her approaching accouchement. Mr. Self called on her, and persuaded her to change her mind, telling her that there was no such person as Mr. Thomas Beale, a surgeon; that Mr. Beale had been beadle to a hospital, and that the office of such a man was to clean away the guts and garbage.

Other witnesses deposed to the anatomical, surgical, and obstetrical studies of the plaintiff, and to the opportunities he had enjoyed of acquiring anatomical knowledge, as dissecting beadle to the London Hospital.

His diploma from the College of Surgeons was also put in.

The jury found a verdict for the plaintiff, damages £100.

In any fatal case, a preferable, or at least a different treatment, may afterwards be suggested; and perhaps it would have been better to prescribe a greater number of leeches (not forty or fifty, however) in Mrs. Neck's case.

The other part of the business is less doubtful. The man who rises from the lowest drudgery of the profession to be a member of the College of Surgeons, must have some good stuff in him, and need never be ashamed of his elevation. Mr. Self, however, does not appear to have known, till too late, that his rival really *was* a member of the College; so that this law-suit, like so many others, originated in a misunderstanding*.

Another action for the same libel,

brought by the same plaintiff against a different defendant, was compromised by a verdict for the plaintiff, with 40s. damages.

CLINICAL LECTURES,

Delivered at St. Thomas's Hospital,

By SAMUEL SOLLY, Esq., F.R.S.

Assistant-Surgeon, and Lecturer on Clinical Surgery, at St. Thomas's School.

LECTURE III.

On amputation in cases of severe injury.

GENTLEMEN,—The number of severe injuries to the extremities requiring amputation, which have been admitted under my care since the commencement of this medical session, induces me to bring the subject before you.

I know no more responsible position in which a surgeon is placed than when he is called upon to decide the question whether amputation is necessary to save the life of his patient? He has to balance calmly and deliberately, always remembering that, even in a surgical point of view, it is more honourable to save a limb than to remove it, however dexterously the operation may be performed. That master in our profession, John Hunter, says, "This part of surgery," speaking of operations, "is a reflection on the healing art, it is a tacit acknowledgment of the insufficiency of surgery: it is like an armed savage who attempts to get that by force which a civilized man would get by stratagem. No surgeon should approach the victim of his operation without a sacred dread and reluctance, and should be superior to that popular *éclat* generally attending painful operations only because they are so, or because they are expensive to the patient." Having once, on sufficient grounds, decided to operate, your decision should be so fixed in your own mind that you will not allow yourselves to waver or regret the result, whatever that result may be. The surgeon will, of course, allow the judgment of others to have its due force in assisting him to his conclusion. But if, after duly weighing the whole subject, he sees what to him appears sufficient reason to differ from them, he will do so firmly, not allowing the fear of giving offence to weigh in the balance. But he must not form his judgment rashly; he must strengthen his own experience with that of his forefathers; and the more he has taken pains to make himself acquainted with their *facts* the more likely he is to have a clear view of the bearings of each individual case which comes before him. If, gentlemen, you have only been in the habit of reading modern works on surgery, you will be surprised and de-

* One of the witnesses stated that an action is pending, brought against Mr. Beale by the Apothecaries' Company, as he has not their license.

lighted with the terseness of the style, and the immense mass of experience which many of the old surgeons exhibit in the writings, when you take up the writings of those who have left us some little time. You cannot learn how to practise your profession by reading, but reading will make you think more of that which you see at the bed-side, and remember better the facts of your surgery which are brought before your notice in the wards of the hospital. There are many accidents of so serious a character that it requires but little deliberation to decide as to the course which it is necessary to pursue, and under this class may certainly be included the two cases of compound fracture of the ankle-joint, in which I was obliged to remove the legs below the knee. But there are many practical points of interest involved in these cases, to which I will direct your attention in my next lecture.

The two following cases bear more immediately upon the question of amputation or non-amputation in cases which will admit of doubt as to the necessity of the operation. As regards the propriety of operation in the first case, there was very considerable difference of opinion; and some augured that the result would be unfavourable. The reasons which determined me not to amputate I shall give you after you have heard the two cases*. The second case was lately before your notice, as I believe that most of you were present at the operation.

John Cochlin, æt. 14, admitted on Monday night, April 25th, at half-past 10 o'clock, with a lacerated wound on the inner side of the foot, extending nearly from the malleolus to the extremity of the great toe, and transversely on the side of the foot, and slightly on the dorsum, in which direction the skin was extensively separated, so that the little finger could be passed in for some distance; there was also fracture of the metatarsal bone of the second toe. The lacerated wound on the inner side opened the joint of the metatarsal bone of the great toe and the cuneiforme internum, but very little separation of the articular surfaces; and the tibia was fractured just above the internal malleolus. It was caused by the wheel of a waggon passing over his foot, having slipped while endeavouring to get into it. Mr. Solly ordered—

Tinct. Opii. ℞xx., statim sumend. et
Ol. Ricini. cras mane. Cold water and
lint to be applied over the foot.

26th.—Has had a restless night; bowels open well after taking castor-oil; pulse 40, weak; skin hot and dry; very little hemorrhage from the wound, which is commencing to swell round the ankle.

To continue the water-dressing.

27th.—Slept at intervals during the night; ankle rather more swollen; complains of more pain in the foot, and the wound looks healthy. Ordered to take the

Mist. Effervescens, with Tinct. Aurant. ʒij.;
et Ammon. Carb. gr. iv. ter die. A
warm bread and water poultice to be
applied over the foot.

Skin hot; tongue furred, and moist;
pulse 65, small.

28th.—Feels not in quite so much pain in the leg and foot; had a restless night; appetite very bad. Has had a little broth for dinner.

To continue the same medicines and poultice.

29th.—Foot in more pain to-day, and ankle and leg more swollen; bowels open once; skin hot and dry.

30th.—Had a better night; much the same as yesterday.

Pulv. Rhei. c. Cal. gr. x. hæc nocte, as
his bowels are rather costive.

May 2d.—Meat and a pint of porter for dinner; wound looks healthy and discharges matter; bowels open twice from powder.

3d.—Had rather a better night; says his foot is in rather more pain; suppuration freely commenced; pulse 84; tongue moist, and very much furred.

4th.—Wound to-day looks much the same; granulations healthy, covering the surface of the wound.

6th.—Very considerable change; tongue very much furred; pulse quick and irritable; erysipelatous inflammation of a dullish colour extending up the leg, with a decided line of demarcation between the wound and healthy skin; leg swollen and œdematous: a free incision was made over the tendons of the gastrocnemius.

7th.—Complains of great pain in the foot; countenance bad, and general appearance unfavourable; very restless; pulse 76, without power; no appetite, tongue more furred and dryer; inflammation extending up the leg; wound looking unhealthy; discharge very free and acrid: an incision was made, about two inches in length, about three inches above the original wound; this did not bleed very freely: expressed himself much relieved: bowels have been open twice; motions healthy.

8th.—Has had a restless night, but says he feels rather better; pulse small, and 100; bowels open once; inflammation on the leg rather decreased; ankle rather more puffy, and swollen. From his appearance this morning I began to fear that he would sink if amputation were not performed. I therefore had a consultation with Mr. Tyrrell on the subject, and he decided that we might go on, at any rate for a day or two, without danger to life: he recommended a free incision to be made above the internal malleolus.

* Reported by Mr. Walker.

This was done to the extent of three inches. From the opening there was a considerable discharge of matter. He expressed himself relieved. Ordered him to take

Liq. Cinchon. m. xx.; Acid Sulph. Dilut. m. xx.; Syr. ʒj; ter die in aqua, and to have an oatmeal poultice, to be applied over the foot, and to extend up the leg nearly to the knee; to have fish for diet, and ʒij. brandy daily.

9th.—Had rather a better night; leg not quite so much swollen, and inflammation rather diminished; pulse 96, small; bowels open once; skin hot.

10th.—Had a much better night; pulse 93, small; says his foot is in less pain; inflammation much less, and swelling decreased; wound on the foot looks much the same as yesterday; discharge healthy; appetite better; tongue not so much furred.

12th.—Considerable discharge from the wound; granulations healthy.

Continues the same medicines, and has meat daily.

13th.—Leg rather more inflamed; a small incision was made in the internal malleolus to liberate the skin which was constricted round the ankle, from the foot being more swollen; tongue furred and moist; pulse 100, small, and weak.

16th.—Foot in less pain; swelling on the dorsum of it rather decreased; considerable healthy discharge; a few strips of plaster to be applied from the heel to the great toe, and transversely across the wound with a piece of lint, the size of the sore beneath: inflammation on the leg rather less.

Continues wine and meat daily, and likewise the same medicine.

17th.—Says he feels rather better; foot and leg in less pain; granulations and discharges healthy; tongue moist, and not so much furred; pulse small, but rather more power; strapping applied as yesterday; no irritation produced from it; wound on the whole looks better.

19th.—Much the same; a small puncture was made on the dorsum of the foot, for the escape of a small collection of matter, the foot strapped as before, and poultice over it.

21st.—Rather better; ankle and foot less swollen; considerable discharge; tongue moist; appetite rather better; bowels open once to-day.

23d.—Complains of pain on the right side, occasioned partly by his lying on that side; and bowels not being open quite so freely as necessary, to take

Pil. Hyd. gr. j; Pil. Rhei. co. gr. iv. h. s.

24th.—Complains of more pain in his right side, and is ordered to have a mustard poultice to it; bowels have been open

once, but motions not healthy; skin hot; pulse quick, 110, weak; wound looks rather better; discharge not so great.

Repeat the same pill to-night.

25th.—Rather better than yesterday; pain in side nearly subsided; tongue furred, and moist; rather more discharge from the dorsum of the foot, and from a small opening on the external malleolus; was ordered to be put into a swing box, so as to alter the position of the limb, and to allow the wound on the ankle to heal.

The strapping to be applied as before.

26th.—Pain in the side quite subsided to-day; had a good night; pulse not so quick, but still wanting power; limb looks improving, and feels, he says, more comfortable from change of position.

30th.—Going on very comfortably.

June 10th.—Improving gradually in health; appetite very good, and gaining strength; granulating surface on the wound looks healthy, and less discharge.

Continues his wine, porter, and meat, daily.

21st.—Removed out of the swing-box, as the wound on the inner malleolus was nearly well, and the dorsum of the foot a great deal better, which is dressed daily with strapping.

The poultice to be left off.

30th.—Has improved in health very much lately; is able to get about with a crutch; foot dressed daily.

July 14th.—The wound is now about the size of half-a-crown; granulations rather high, which have been touched with sulphate of copper.

Aug. 4th.—Wound on the dorsum of the foot quite healed, but a sore about the size of a shilling has made its appearance on the inner malleolus, from his using his foot too much.

Was ordered to be poulticed, and to keep his bed.

20th.—Wound quite healed, and discharged well.

The observations I have to make regarding the propriety of amputation in such cases I will postpone until I have detailed to you another case exhibiting a similar injury in an older man. But with regard to the treatment, there are one or two medical points of importance illustrated by it. First, the local application of cold water. I have always found this by far the best, in the first instance, especially where there is any tendency to hæmorrhage, as there was in this case; the use of purgatives containing a small quantity of mercury. I have often found that a purge of calomel and rhubarb will act much more decidedly as a sedative,

allaying pain and giving sleep, than a full dose of opium with confined bowels. I object to salts and senna in these cases, as liable to produce diarrhœa. The advantage of making free incisions, where there is much swelling, was also shewn. In fact, amputation was averted by free incisions made not merely to allow of the escape of pus, but to relieve tension. You will also see the value of stimulants, such as brandy, ammonia, and bark, though given to a lad unaccustomed to them. We find the swing-box, into which the limb was placed after the active inflammation and suppuration had subsided, an excellent adjunct where rest is essential, and much confinement, by means of splints or bandages, impossible. We must now direct our attention to another case, which exhibits not the power, but the weakness, of surgery.

William Peters, bricklayer, æt. 50, tolerably healthy-looking man.

December 7th.—Was admitted half-past 2 P. M. with the following injury, which was occasioned by a heavy piece of timber falling edgways on the dorsum of the foot, about two hours previous to admission. The 2d, 3d, and 4th metatarsal bones, with the phalanxes of the corresponding toes, were smashed so entirely, that on feeling these toes, there was nothing but the integuments left, like the fingers of an empty glove. The bones had been, as it were, squeezed out of their coverings. The skin and soft parts on the dorsum were much bruised; the first phalanx of the great toe was broken, and there was an extensive laceration on the sole of the foot, extending for about four inches on the inner side, over the abductor pollicis; the little toe was uninjured.

After examining the foot carefully, I felt convinced that if the injured portion were left, such extensive sloughing, and its consequent constitutional inflammation, would ensue, as must endanger the man's life. I therefore determined to remove it, and the patient readily agreed to the operation.

The little toe, and the metatarsal bone of the great toe, being both entire, I determined to leave them, and merely remove the central portion of the foot, as by this mode of proceeding I should still have the most important points of support, namely, the balls of the great toe, and the little toe, and the attachment of the anterior and posterior tibial muscles, as well as the peronei. I also determined not to remove the metatarsal bones at their articulations, as I consider it always desirable to avoid opening joints, and leaving the articulating surfaces to granulate.

Operation.—I first pushed a small catlin into the metatarsal space, between the great toe and second toe, and cut my way out through the sole of the foot next made a

similar incision between the little toe, and that next to it; then united the two incisions above, by a circular incision across the dorsum of the foot about midway between the superior and inferior extremities of the metatarsal bones. I next run my catlin horizontally from the outside of the foot to the inner, through the integuments of the sole, dividing downwards to the toes. By this incision the inferior flap was completed. I next cleared the bones, and divided, with Hay's metacarpal saw, the second metatarsal bone, and then removed the third and fourth, which were broken off and easily separated. The fourth was fractured much higher up than the rest, and I deemed it advisable to divide the third and second on a level with it. Ligatures were placed on the anterior tibial and plantar arteries.

As there was still a little oozing, though not apparently from any large branch, I placed a piece of lint, with cold water, over the wound, and a roller round the foot, and sent him to bed.

About two hours afterwards, when I went to dress the wound, I found there had been a good deal of bleeding, that is, about a pint. I then proceeded to search for other vessels, and applied four ligatures, though with considerable difficulty, as they were muscular branches. I put in one suture, and again dressed it with lint and cold water, by which the flap were approximated: a roller round the foot brought the two sides pretty close together. The inferior flap was rather short. Ordered—

Tinct. Opii, ℥xl.; Spirit. Ammon. Aromat. ʒj. ex. Mist. Camph. To be taken in an hour's time, when the ward is quiet.

Dec. 9th.—Says he is pretty comfortable, though he did not get much sleep; feels very thirsty; pulse good; tongue clean. Ordered to take a little red wine and water occasionally, and repeat the draught at night.

Dec. 10th.—Going on well; pulse good; tongue clean; did not disturb the stump. Ordered—

Pulv. Rhei. c. Cal. gr. x. hora somni, et Mist. Sennæ. Co. cras mane. Mutton chop and porter, poultice to the stump, over the dressing.

11th.—Has had rather a restless night; bowels open twice this morning; healthy motions; tongue clean; says he is comfortable; countenance good; rather thirsty. I dressed the stump in the following way:—First, removed the old roller, and then applied some lint dipped in the Lotio Sodæ Chloratis over the exposed surfaces, which were just beginning to suppurate. I then put a roller round the toes, by which they

were considerably approximated; this roller I continued up the foot and round the ankle.

To continue the same nourishment, and to have the anodyne at night if restless.

13th.—Going on well in every respect.

The case of John Cachlin shews how much reproductive power there is in the young; and if we contrast it with the second, that of William Peters, you will perceive that, as regards the severity of the injury, it was greater in the one in which I saved the limb than in that in which I performed the operation. What, then, constituted the difference in the cases which led to the different line of practice? Simply the difference of age and constitution. The one was a healthy boy just out of a Union workhouse, where, of course, his habits could not have been intemperate, and only 14 years old. The other was a man of 50, and a labourer in the neighbourhood of London. I say, a labourer in the neighbourhood of London, for I am sorry to say that, as a general rule, the habits of these men are bad. They, for the most part, spend their money more in drinking than in wholesome food; and I am, *à priori*, afraid of them. I have no doubt that if in practice in the country, I were to meet with such an accident occurring to an agricultural labourer, that I might attempt to save the limb with perfect safety: of course, I am supposing that the man is not removed into a London atmosphere, but remains in the country, and has the benefit of a pure air during the period of his confinement. The difference of age and constitution were the grounds for the different plan of treatment.

In detailing the case of the older man, I called your attention to the question of the situation you should choose for the removal of the injured part, and my reasons for selecting the spot which I did; for in all injuries of the hand and foot it is astonishing how much is gained if you can preserve even only a single finger or toe.

FELLOWES' CLINICAL PRIZE REPORTS.

BY ALFRED J. TAPSON.
University College Hospital. 1842.

CASE II.—*Poisoning by oxalic acid, marked by excoriation of the fauces, constriction, violent vomiting, purging, faintness, partial loss of consciousness, great feebleness of heart's action, lividity of extremities, &c.—successfully treated by Chalk Water, and subsequently the remedies for Gastritis, &c.*

Harriet Stages, æt. 50, admitted June 30th, 1842, under Dr. Williams. A woman of moderately stout conformation, a naturally

rather ruddy complexion, and sanguineous nervous temperament. Is a widow, and has five children; habits regular, but is very poor, and has fared very indifferently of late. Her previous health has been good, and she has never suffered from any disease, excepting epileptic fits, which she has been subject to for many years, but less lately.

Present illness.—She states that at eight o'clock this morning she swallowed a pennyworth of the "stuff that boot-tops are cleaned with," dissolved in a quarter of a pint of water. In appearance, she says, it resembled Epsom salts, and was equal in bulk to about two ounces of that substance. As she swallowed it, she felt it burn her mouth and throat very much, and it had a very sour taste. In about ten minutes after taking the draught, she felt pain, heat, and soreness at the pit of the stomach, and violent vomiting came on. She says that what she first vomited was like beer, only much redder. In about an hour purging commenced; great constriction of the throat; intense thirst; giddiness, and faintness, and her hands and feet felt dead; her senses seemed to be "going," and she so far lost her consciousness as not to have any clear idea of what occurred subsequently; she was at this time quite alone, and remained so for seven or eight hours, when her neighbours heard her retching violently, and came to her: she then got an emetic, which increased the vomiting: it had continued more or less ever since it began.

The symptoms on her admission at five o'clock, P. M. (nine hours after taking the poison) were as follows:—

The lips were shrivelled and sore; the mouth was sore all over; there was a sense of uneasiness and constriction in the throat; intense thirst; nausea, and occasionally vomiting; she complained of giddiness in the head; a burning pain in the epigastrium, and right hypochondriac and iliac regions, and tenderness on pressure in those situations, especially over the cardiac end of the stomach; the abdomen generally felt hot to the touch; the radial pulse was scarcely perceptible; the heart's action exceedingly feeble, and the sound barely audible; the hands, arms, legs, and feet, were of a livid colour, and cold, and she could hardly move the legs at all.

Copious draughts of chalk and water were administered to her immediately, and ordered to be continued, and bottles of hot water were applied to the extremities.

July 1st.—She has had a little sleep during the night; the arms and legs are of their natural colour, and quite warm; the nausea and retching continue, also the pain, heat, and tenderness of the abdomen; the thirst

is still great; the tongue covered with a coarse white fur with red interspaces; the pulse 100, small.

11 o'clock, A. M.—*Epigastrio admoveantur Hirudines xj.*; *Calomelanos gr. v.*; *statim sumend: et post horas tres*; *Olei Ricini, ʒiij.*

3 o'clock, P. M.—*Epigastrio admoveantur Hirudines x. et postea*; *Cataplasma Emolliens.*—*R. Magnesiae Calcinatae, ʒij.* *Acidi Hydrocyan. Dil. ʒss.*; *Misturae Acaciae, ʒi.*; *Aquae, ʒiij.*; *M. f. Mistura*; *sumatur cochli. amplum tertiâ quâque horâ.* *Crus mane sumatur Olei Ricini, ʒi.*; *subindo bibat Decocti Hordei ad libitum.*

2nd.—She was somewhat relieved by the leeches; but there is still some pain in the abdomen, chiefly in the right iliac region, and about the middle of the sternum; the sickness also continues: the skin is warm, pulse 96, soft, but somewhat bounding; the tongue covered with a coarse white fur, and red at the apex; bowels freely opened, stools green; she was very sick after taking the castor oil.

Applicetur Emplastrum Cantharidis Epigastrio.

3rd.—The blister has risen well, and discharged freely, and since then she has had no pain in the pit of the stomach; has slept but little; feels a slight pain across the forehead, and “wandering;” the skin is hot and perspiring freely; the vomiting has not returned since yesterday; she is still thirsty, and has a little appetite; no soreness of the throat now; bowels opened once freely; the evacuation very dark, watery, and foetid; the urine free.

4th.—Has been restless and feverish during the night; the skin is hot and moist; has had no headache, but feels faint and giddy on the least movement; has a feeling of constriction across the chest, and the breathing is rather short; has a little cough, and expectorates a considerable quantity of greenish mucus, &c.; still has a burning at intervals down the right side, and when she moves she has a very sharp pain in the left hypochondriac region, which is very tender to the touch, and the whole abdomen is more or less tender on pressure: the pain in the left side seems to be superficial; it was not increased by drinking. Pulse 67, firm, and rather resisting; she can now move the legs readily in any direction, but they are weak in common with the rest of the body.

5th.—The tongue is less furred; thirst less, bowels not opened yesterday or to day.

R. Pilul. Hydrarg. gr. iij.; *Extract. Conii, gr. iij.*; *Pilul. Rhei Comp. gr. vi.* *fiant pilulæ duæ, horâ somni sumendæ.*

7th.—Sleeps pretty well; is more com-

fortable, and better altogether; the head still feels light, and legs weak; very little pain in the left side now, but it is still tender when touched, and she has the burning pain in the right side at times; the mouth and throat are not at all sore now; pulse 68, natural; heart's sound distinct and healthy; breath sounds also nearly natural; no pain in the epigastrium; tongue furred as before; thirst normal; appetite improved; bowels open.

Omittantur pilulæ. *Omni mane sumat.* *Olei Ricini, ʒss.*; *Middle diet.*

9th.—Feels better: the head is much more comfortable and clear; sleeps well, but says that she trembles a great deal in her sleep, and wanders; complains much of weakness in the legs; tongue still furred and brownish; appetite good; bowels regular; urine abundant and natural.

Omittantur Medicamenta et Aqua Hordei.

R. Sodæ Sesquicarbonatis, gr. x.; *Infusi Calumbæ, ʒi.*; *Acidi Hydrocyani Diluti, ℥v.*; *Aquæ Menthae Pip. ʒss.*; *ft. haustus, ter die sumendus.*

11th.—Sleeps well; the giddiness is quite gone, and the head feels quite well; there is very little tenderness on the left side, and no pain anywhere; pulse small and weak.

15th.—Feels tolerably well; the burning in the right side is quite gone, and she is considerably stronger both in the legs and in the body generally.

Discharged cured.

REMARKS.—The account of the case of Harriet Stables, as we have here given it, proves very clearly that she had swallowed some highly acrid irritant poison, and probably one which, besides its local action on the alimentary canal as it passed along it, also exercised a secondary influence on the nervous system, and through this on the heart especially.

1st. The symptoms that were present abundantly proved its local action, by the burning sensation in the mouth, the swelling and probably excoriation of the lips and tongue; the constriction of the throat; the burning pain in the stomach, and the vomiting and subsequent purging.

2nd. Its influence on the nervous system was sufficiently manifested by the giddiness, faintness, numbness, and diminished voluntary power of the extremities, and the partial loss of consciousness, &c.; and

3rd. Its especial action on the heart was shewn by the extreme weakness of the circulation; the almost imperceptible pulse; the coldness and livid appearance of the extremities; and indeed, some of the symptoms under the second head may have been due to this cause, for the circulation when weak is almost always partial and irregular, so that whilst some parts receive an insufficient sup-

ply of blood, others are supplied with a superabundant quantity, especially the cerebro-spinal axis, from the peculiarity of its circulation.

We have next to inquire what substances will produce these effects, and to decide which of these was the one taken in the present case: we shall at once fix upon oxalic acid, from the strong circumstantial evidence of this being the substance that was swallowed, and see how far this is borne out by a comparison of the symptoms usually produced by this with the symptoms existing here. Referring to cases where this has been swallowed (generally by mistake) we find that one of the earliest symptoms is burning pain in the stomach and vomiting. Vomiting does not always occur, however: thus, it did not occur in three out of the eleven cases quoted by Christison in the *Edinburgh Medical and Surgical Journal*; but we may mention, that in all these the poison was much diluted, and they all terminated fatally in half an hour. The matter vomited is commonly dark, and sometimes sanguinolent, as it would appear to have been in this instance, from her description of it, viz. that it was like beer, only much redder. Purging is a much less frequent symptom; it only occurred in two out of the eleven cases above referred to; in this patient it came on earlier than usual. The other symptoms usually observed are, constriction of the throat, great thirst, more or less severe nervous symptoms, and in all the cases an almost imperceptible pulse; and we have seen that all these were present in this case.

The post-mortem examinations of the fatal cases prove the violence of the local action of the poison, the mucous membrane of the stomach being separated and much softened (Christison says it acts by dissolving the gelatin contained in the coats of the stomach); blood effused, and sometimes marks of violent inflammation found: it is remarkable that this was not oftener the case. If we refer to the experiments made on animals, we find that the above-mentioned action is still further confirmed: in these the nervous symptoms were often very marked, death being produced by asphyxia—violent tetanic spasms being caused, and the heart's action suddenly ceasing, and the animals falling down dead: this was when the poison was introduced into the stomach, and the œsophagus tied. When injected into the veins, it arrests the heart's action almost instantly, very probably by coagulating the blood.

The following is the *circumstantial* evidence of its being oxalic acid: it was "the stuff used for cleaning boot-tops," which is well known to be oxalic acid: it resembled Epsom-salts in appearance: the best proof of which resemblance is the number of times

in which it has been taken for it by mistake, with fatal results: it had a very sour taste, which would at once distinguish it from Epsom-salts: at the same time, this property would perhaps leave a doubt as to whether it were not some other acid, as citric or tartaric. But independently of the difference of appearance, these have been proved not to be poisonous in considerable doses. The only other evidence that could have been desired was the chemical analysis of the vomited matters; and this we had not had an opportunity of making. But combining all the preceding facts, we cannot possibly doubt the fact of its being oxalic acid that was taken. Such being the case, and such the symptoms produced by it, what were the indications for treatment?

In this, as in all cases of poisoning, the first thing to be done, after ascertaining the nature of the poisonous agent, is to use means for removing, or rendering innocuous, any of the poison that may at the time remain in the stomach. The means for removing the poison are either emetics or the stomach-pump. The patient had already been vomiting spontaneously for several hours, and had, in addition, taken an emetic; therefore, in all probability, any thing that could be removed from the stomach by such means had been, already. In many kinds of poisoning, copious draughts of any bland fluid are serviceable, by diluting the poison; but it has already been stated, that in cases where oxalic acid had been taken much diluted, it had always proved fatal, because, says Christison, the absorption is facilitated: this should, therefore, be avoided rather than practised. We may notice here, too, that she had been drinking large quantities of cold water to quench her thirst.

The only thing, therefore, remaining to be done, as far as the first indication was concerned, was to give something that should neutralize the oxalic acid, and render it inert: it is necessary that both these points should be accomplished, as otherwise little benefit will accrue; for the alkalies, as potash or ammonia, will neutralize the acid; but then the oxalates of the alkalies are equally as active as the free acid: nothing, therefore, will be gained by giving these. Dr. A. T. Thomson first pointed out that lime, by forming an insoluble compound with oxalic acid, renders it inert. This was the remedy pointed out as the best, and accordingly she was given large draughts of chalk and water. The only other means used at this time was the application of bottles of hot water to the extremities, to restore the circulation in them. On the following morning, as she had survived the primary effects of the poison, including its general influence on the system, and indeed had partly recovered from these, as indicated by the restoration

of the circulation to the extremities, &c., it was necessary, secondly, to adopt means to remove the gastritis which might naturally be expected to follow such violent local irritation, and which, from the pain, heat, and tenderness of the abdomen, continuing, with great thirst, sickness, and patches on the tongue, &c., probably had arisen. Accordingly, six leeches were applied to the epigastrium, and five grains of calomel, followed by a dose of castor-oil, was ordered to remove any noxious matter that might be in the intestines; and as the pain and sickness were not relieved in the afternoon, Dr. Williams ordered ten more leeches and a large emollient cataplasm to be applied afterwards; also a draught, every three hours, containing hydrocyanic acid to relieve the vomiting, and magnesia to neutralize the oxalic acid (the oxalate of magnesia is very little soluble). Barley-water to be drunk freely as a demulcent to sheathe the intestines. The second morning the castor-oil was repeated, and operated on the bowels freely; the pain was less severe, and the tongue not so generally red: but still farther to remove the inflammation of the mucous membrane, a blister was applied to the epigastrium: this entirely removed the pain from this region, and she had no return of it; the vomiting also ceased, and she was evidently better, though in a low and highly precarious state.

Subsequently to this there were various symptoms complained of at different times—as giddiness in the head, pain in the left hypochondrium, want of sleep (to which, no doubt, the state of her mind contributed largely); but the chief complaint of pain was in the right side of the abdomen, as low as the iliac region, seeming to indicate that the lower portion of the small intestine had suffered. All these symptoms, however, gradually diminished, the last-mentioned being the one that remained longest: the thirst ceased, the appetite returned, and she gained strength, but was very weak, especially in the legs; the mouth and throat soon got well. We noticed that there was a considerable quantity of greenish mucous matter expectorated for a day or two, and this was very likely owing to the injury done to the mucous membrane of the fauces, &c., by the acid.

From the 3d to the 9th of July, she took no additional medicine, except some aperient medicine, and at this time, as all the severe symptoms had subsided, and but little weakness remained, she was given a tonic. Calumba was selected, on account of its mildness, and because it contains a considerable quantity of mucilage, and it was combined with soda, which is always preferable to an acid in or after gastritic affections; and by the 15th she had so far regained her strength

as to be able to be discharged. The tongue continued to have a coarse white fur on it to the time of her departure: much of this appearance was due probably to the mechanical retention of the particles of the chalk and magnesia which she had taken.

With the *cause* we have nothing to do—it was of a moral nature—fear, she stated, of being (falsely) accused of having stolen some things that had been missed in the house where she was lodging.

The *prognosis* was at first extremely unfavourable, from the quantity taken, which was probably an ounce, the previously weak state of the patient, and the obviously severe effects it had produced at the time of her admission. The fact of her having vomited so soon as she did was certainly in her favour, but even though vomiting occur instantly it by no means places the patient out of danger. In one case a woman swallowed two ounces of the acid in about three parts of water, and vomited instantly afterwards, notwithstanding which she died in about twenty minutes.

Again, although she survived the primary effect, there was still great danger to be apprehended from the secondary effects, viz., the gastritis, &c. and in giving a prognosis of the cases it is necessary to be very guarded, as even after an apparently almost complete recovery persons have died: thus death has occurred as late as eight or ten days after taking the poison. In spite of all the unfavourable circumstances, the patient went out cured, as we have before seen.

MR. MAYO ON THE SIZE OF THE IMAGES ON THE RETINA.

To the Editor of the Medical Gazette.

SIR,

ALTHOUGH the eye is an organ of the body not much attended to by medical students, I have thought it right to bestow some little attention on it. In reading Mr. Mayo's new work, entitled "The Nervous System and its Functions," I was a good deal struck by the following statement:—"The eyeball is an optical instrument containing refractive media, through which the rays of light proceeding from an object are arranged on the retina as in a camera obscura; that is to say, in an inverted picture; *the angular breadth and height of which may be easily shown to be one-half of those of the object so represented on it.*" To the first part of this sentence there can be no objection; but the latter part, which I have taken the liberty to mark in italics, is so contrary to what is commonly taught, that I should feel exceedingly obliged to Mr. Mayo, if he

would have the goodness to explain the method, by which he shews the angle, subtended at the focal centre of the eye by the image on the retina, to be one-half of the angle subtended by the object.

I am, sir,
Your obedient servant,
A MEDICAL STUDENT.

Dec. 21, 1842.

CASE OF SUPPOSED SUICIDE
BY
THE DEUTO-SUBCARBONATE OF
COPPER,
OR NATIVE VERDIGRIS.
By M. DÉGRANGE.

M., a WORKMAN, who was not known to have any reason for deep distress, complained, on the 8th of August, that he was suffering much, but without referring his uneasiness to any cause, or showing any symptoms of serious illness either in his features or gait; his wife, however, mentioned, that on the previous day he had vomited several times, and been unwilling to eat. The same day, having drunk out of a glass, which was found empty, and which had a circular and bluish mark in the middle of its cavity, he was found, about 11 o'clock, stretched, almost without consciousness, in the yard of his house. There were several contusions on his head, which made it supposed that he had fallen from the window of his room, on the second floor; and he was therefore placed in an accident ward of the hospital (St. André) to which he was carried. He died at 4, having passed the intervening time in a comatose state, neither answering questions, nor giving any sign of intelligence. The face was pale, the eye turned upwards, the respiration free, but hurried; both the upper and lower extremities were of icy coldness, and covered with a cold sweat; swallowing was painful; and there were neither alvine dejections nor vomiting. The abdomen was not sensible to any kind of pressure.

Post-mortem examination.—There was nothing remarkable externally, except the ecchymoses which we mentioned above. There was very decided sanguine congestion over the whole surface of the brain. The mucous lining of the cheeks was discoloured. In the œsophagus there were several collections of a greenish gravelly substance, bearing the physical characters of verdigris. The mucous membrane of the œsophagus offered several marked arborisations. The stomach also contained several collections of the greenish substance, with a diffused green colour, a decided vascularity towards the greater curvature, and seven or eight points of ulceration in the great curvature, which had eaten through the whole thickness of

the mucous membrane. The entire mass of intestines had a greenish tint—not the produce of putrid decomposition. In several parts of them, ecchymoses were to be seen with blackish spots and vascular ramifications, with softening of the mucous membrane, which were more apparent in the first half of the duodenum; there were none in the ileum, which contained some greenish mucus. The large intestines and the rectum were filled with ash-coloured fæces.

The heart was filled with black clotted blood, and its lining membrane was of a bright red.

An analysis of these different parts, made by skilful chemists, showed—

1. That the substance found in the stomach and intestines of M. was carbonate of copper.

2. That a cupreous salt was contained in the fæces and the whole of the alimentary canal.

3. That the urine found in the bladder contained a small quantity of a salt of copper.

4. That the poisonous salt was not to be found either in the blood or the heart.

Among the questions raised by M. Dégrange on occasion of this remarkable case, one of the most important is this:—“Was the death of M. caused by the introduction of a poison into the alimentary canal?” The absence of vomiting and stools, which are commonly so copious in this variety of poisoning, may occasion some doubts; but if we take into account, firstly, the great quantity of the cupreous salt found in the intestinal tube, which must have acted quite differently than when it is introduced in smaller doses; secondly, the nature of the lesions of the mucous membrane of the stomach and intestines; thirdly, the apoplectic symptoms which characterised the last hours of the patient's existence; and lastly, the presence of the poisonous substance in the midst of the contents of the rectum; we shall no longer doubt either the reality of poisoning during life, or that it was a case of suicide; for we must admit that doses of the poison were taken several days successively.—*Journal de Médecine pratique de Bordeaux.*

PHYSICIANS.

PHYSICIANS are some of them so pleasing and conformable to the humours of the patient, as they press not the true cure of the disease; and some other are so regular in proceeding according to art for the disease, as they respect not sufficiently the condition of the patient. Take one of a middle temper; or, if it may not be found in one man, combine two of either sort; and forget not to call as well the best acquainted with your body, as the best reputed of for his faculty.—*Bacon.*

UNIVERSITY OF LONDON.

THE Senate, at its sitting on the 21st inst. conferred the following degrees:—

BACHELOR OF MEDICINE.

First Division.

Dunn, John Travis, Guy's Hospital.
 Ellison, James, St. Bartholomew's Hospital.
 Garrod, Alfred Baring, University College.
 Hudson, John, Leeds, and University College.
 Inman, Thomas, King's College.
 Jenner, William, University College.
 Johnson, George, King's College.
 Langmore, John Charles, London Hospital.
 Letheby, Henry, Aldersgate.
 Pennell, John Wilson Croker, Guy's Hospital.
 Raper, William Augustus, University College.
 Russell, James, King's College.
 Swayne, Joseph Griffiths, Bristol, and Guy's Hospital.
 Williams, William Henry, University College.

Second Division.

Crutch, George, St. George's Hospital.
 Davis, John Hall, University College.
 Hadwen, Arthur, University College.
 Randall, John, Aldersgate, and St. Bartholomew's Hospital.
 Spackman, Frederick Robert, Middlesex Hospital.

EXAMINATION FOR HONOURS.

(The names are arranged in the order of proficiency.)

Physiology and Comparative Anatomy.

Johnson, George (Scholarship and Gold Medal), King's College.
 Dunn, John Travis (Gold Medal), Guy's Hospital.
 Pennell, John Wilson Croker, Guy's Hospital.
 Williams, William Henry, University College.

Surgery.

Pennell, John Wilson Croker (Gold Medal), Guy's Hospital.
 Russell, James, King's College.
 Swayne, Joseph Griffiths, Guy's Hospital.
 Dunn, John Travis, Guy's Hospital.
 Inman, Thomas, King's College.

Medicine.

Garrod, Alfred Baring (Gold Medal), University College.
 Swaynes, Joseph Griffiths, Guy's Hospital.
 Johnson, George, King's College.
 Dunn, John Travis, Guy's Hospital.
 Inman, Thomas, King's College.
 Pennell, John Wilson Croker, Guy's Hospital.

Midwifery.

Swayne, Joseph Griffiths, (Gold Medal), Guy's Hospital.

DOCTOR OF MEDICINE.

First Division.

Miller, William Allen*, King's College.
 Paley, William, London Hospital.
 Quain, Richard†, University College.
 Unwin, David, University College.

Second Division.

Purvis, Prior, St. Thomas's Hospital.

* A certificate of special proficiency in medicine was awarded to Dr. Miller.

† A certificate of special proficiency in medicine, and a gold medal of the value of £5, for a commentary on a case in medicine, were awarded to Dr. Quain.

MEDICAL DOCTOR—
EXAMINATION FOR HONOURS.*Medicine.*

Quain, Richard (Gold Medal), University College.

ROYAL COLLEGE OF SURGEONS.

LIST OF GENTLEMEN ADMITTED MEMBERS.

Friday, December 23, 1842.

J. Drury. — F. Morgan. — W. Peskett. — H. Horsfall. — D. Sinclair. — J. Percival. — H. W. King.

A TABLE OF MORTALITY FOR THE
METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, December 17, 1842.

Small Pox	8
Measles	36
Scarlatina	40
Whooping Cough	33
Croup	8
Thrush	2
Diarrhoea	2
Dysentery	0
Cholera	3
Influenza	1
Typhus	28
Erysipelas	2
Syphilis	0
Hydrophobia	0
Diseases of the Brain, Nerves, and Senses ..	164
Diseases of the Lungs and other Organs of Respiration	314
Diseases of the Heart and Blood-vessels ..	18
Diseases of the Stomach, Liver, and other Organs of Digestion	47
Diseases of the Kidneys, &c.....	12
Childbed	9
Ovarian Dropsy	0
Disease of Uterus, &c.	3
Rheumatism	4
Diseases of Joints, &c.	2
Ulcer	0
Fistula	1
Diseases of Skin, &c.	0
Diseases of Uncertain Seat	110
Old Age or Natural Decay	83
Deaths by Violence, Privation, or Intemperance	33
Causes not specified	3

Deaths from all Causes

966

METEOROLOGICAL JOURNAL.

*Kept at EDMONTON, Latitude 51° 37' 32" N.
 Longitude 0° 3' 51" W. of Greenwich.*

	DECEMBER.	THERMOMETER.	BAROMETER.
Wednesday	21	from 44 to 55	30.21 to 30.16
Thursday	22	53 45	30.09 29.87
Friday	23	48 39	29.70 29.53
Saturday	24	29 41	29.59 29.71
Sunday	25	25 49	29.70 29.62
Monday	26	48 51	29.55 29.39
Tuesday	27	45 34	29.46 29.57

Wind, S.W. 21st, and two following days, generally cloudy, with rain at times. 24th, clear. 25th, morning clear, afternoon cloudy. 26th and 27th, generally overcast, with rain.

Rain fallen, 4.05 of an inch.

CHARLES HENRY ADAMS.

WILSON & OGILBY, 57, Skinner Street, London.

THE
LONDON MEDICAL GAZETTE,
BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, JANUARY 6, 1843.

LECTURES
ON THE
PRINCIPLES AND CLASSIFICATION
OF DISEASE,

Delivered at St. Thomas's Hospital,

By THOMAS HODGKIN, M.D.

Lecturer on the Theory and Practice of Medicine
at St. Thomas's Hospital School.

THERE is a morbid poison which, in some respects, may be compared to that of syphilis, inasmuch as it produces a peculiar and characteristic appearance in the primary local sore; and also in the fact that it leads to the contamination of the system, which it continues to affect for a long, if not for an indefinite period; but it is even more severe and tremendous in its operation, seeing that it rarely, if ever, terminates in anything short of the death of the patient. Another remarkable circumstance in the affection to which I am now adverting is, that it is derived from one of the inferior animals, although there is reason to believe, that, when transplanted into the human constitution, it there retains its faculty of fatal transmission. The poison of which I am now speaking is that of glanders, or the *morve*. When we consider the protracted sufferings and death of our fellow creatures, which may emanate from the poison of a glandered horse, in addition to the loss of valuable property which may be occasioned by the unsuspected operation of this cause, we cannot wonder that police regulations have been adopted, in this and other countries, for the suppression of the disease. Though I shall not here dwell on the phenomena which attend it, I cannot omit to offer a remark, which the introduction of this instance of disease suggests, namely, that medical men should not think it beneath their notice, or irrelevant to the interests of their

own more noble patients, to devote some attention to the nosography, if not to the therapeutics, of the inferior animals. In theory, useful illustrations may thus be discovered—in practice important hints may be received—and the medical man will be found to gain, rather than to lose, in estimation, when he is capable of offering a valuable opinion under circumstances which, like that of the appearance of suspected glanders, threatens to affect human life and the security of property.

I cannot quit the subject of morbid poisons without noticing one more, which, like that of glanders, is communicated to man from an inferior animal. Though hydrophobia, of which I am now speaking, is so general in its capability of influence, that probably there is not a single species in the whole of the class mammalia which, if the experiments were tried, would be found proof against it, there are but few animals, and these belonging exclusively to the order of *feræ*, from whom man receives this poison. In this country we rarely hear of an instance in which it is derived from any other animal than the dog; but the accounts of several cases have been sent me from Italy, in which man received it from the bite of a cat. In other countries the wolf and the fox have proved the source of the disease. My reasons for noticing the affection in this place, are the peculiarities, both in the local and general affection. A wound of the most trifling character may be inflicted upon the finger or some other part, and heal, and, to all appearance, become perfectly well, without the occurrence of any thing particular to arrest attention in its progress, and leave little or nothing behind, either of scar or altered sensation, and yet, after the lapse of many months, and even of one or more years, the most formidable symptoms of which it is possible for the nervous system to become the seat, may suddenly make their appearance, and carry off the patient in the course of a few hours. I have never met with a case, on the authenticity of which I could

rely, in which these symptoms were protracted to the close of the third day.

I think you will admit that I have produced ample proof that the phenomena, local and general, which may spring from the derangement of a particular part, are very various and very numerous, though we look no further than to inflammation in its different forms. Notwithstanding this number, our general view would be very incomplete were we to pass over, without notice, derangements having other characters. You will recollect that I intentionally passed over sphacelus or gangrene, although, in some cases, the result of inflammation, because the subject appeared to merit separate consideration, and because, as it occurs in several different modes, the subject necessarily required subdivision. On these I must now arrest your attention. It would seem that the original cause of injury may be applied with sufficient intensity to render a part incapable of recovery, and even of performing its nutrient functions in that deranged matter in which they are carried on during inflammation. In such cases, the death may be regarded as immediate, although time must be allowed for the manifest appearance of sphacelus to be produced. Examples of this kind occur in severe cases of contusion and laceration, and the application of destructive chemical agents. Such cases must always be accompanied with inflammation in the adjoining parts which have been injured to a less degree; and this inflammation becomes the means of separating the living from the dead parts; but it frequently happens that, in the progress of the case, a larger amount of substance comes into a state of sphacelus than that which was originally deprived of life by the injury. This points to another form of sphacelus, in which it may be regarded as the result of the violence of inflammation. Sphacelus, in this way, may occur without any very severe affliction at the time the inflammation was excited, whether of the mechanical, chemical, or poisonous description. You see this in cases of anthrax whether large or small. Local inflammation takes place, the ordinary pain which accompanies it becomes intense, and has a peculiar character, suggesting the idea of the application of intense heat, whence the name of anthrax is possibly derived. When the swelling is opened spontaneously, or by art, in order to evacuate the pus which is formed, we find not merely this secretion, but a portion of dead substance. In such cases the partial death is limited, and the constitutional disturbance which attends is probably only that which accompanies inflammation. Sometimes the partial death or sphacelus is brought about in another way. The swelling, which forms a part of the character of inflammation, may take place under such forcible compres-

sions, resulting from the structure of the parts themselves, as, for example, under tendinous fascia, or such other dense structures as may be found in the fingers, that the circulation in the part is interrupted. Hence we have the death of the already injured part produced by strangulation. You can scarcely fail to observe the therapeutical principle to which this points, viz., that of making a timely incision to relieve inflammation, threatening the consequences of which I am now speaking. Sometimes the local death or sphacelus is the effect of the application of a peculiar morbid poison. In such cases you will perhaps say, this is only the repetition of a former case, in which death is the consequence of inflammation. There is, however, this striking difference. In the more ordinary case, the separation of the dead part is effected by the less severe inflammation of the surrounding parts, conducting only to suppuration and absorption, whereas, in the case which we are now contemplating, the part originally affected contaminates those that adjoin it, which are not only involved in the same destructive process, but communicate it to those which are next beyond them. There is thus a continued succession of affected parts, until the constitutional derangement, which in such cases is very severe, has proved fatal, or till causes concur to enable the system to oppose a check, or till art interferes in some way to change the morbid process set up in the newly contaminated parts. Such examples may occur in the hand, from dissecting and other wounds; but perhaps the most frequent, as well as the most formidable, are those examples which may sometimes be seen in the foul wards. The examples are of a very similar description, although the application of the poison is not perceived when contagious disorders set up a local disease, which leads to sloughing, as in the case of cyanche maligna. The constitutional derangement which accompanies all these latter cases is of the most severe and alarming character.

The instances of the death or sphacelus of a particular part which I have hitherto adduced, have been occasioned by some serious local injury, either mechanical or the application of poison, and have been attended by severe symptoms, both in the part affected, and in the system generally; but we may have the death of a part taking place under very different circumstances. One or more fingers, or the whole hand, may shrink in size, may become lowered in temperature; and losing the fresh appearance of healthy flesh, assume a dull, slightly livid hue. At the same time the loss of power is very perceptible, in so much that I have seen the character of paralysis in some degree produced. There are, however, distinguishing features sufficiently marked to prevent the

cases from being confounded. In addition to the peculiar appearance of the part, the pulse in the arteries leading to it is scanty or quite imperceptible, and those which are a little further removed from it are often hard and knotty, so as to indicate the nature of the complaint as depending upon disease of the arteries impeding circulation. From the advanced period of life at which this form of slowly advancing death takes place, as well as from the nature of its immediate cause, it has acquired the name of senile gangrene.

There are other cases of derangement which I might probably have added to the already numerous varieties of inflammation to which I have adverted, but which, from their belonging to a class of cases presenting many peculiarities, I have thought it desirable in this general view distinctly to separate from them. The cases of which I am now speaking may either supervene on some known local injury, or they may make their appearance without any assignable local cause: for example, a finger may be observed to swell: on examination it will be found somewhat hard and resisting, and this hardness will seem to be nearly or quite as deep as the bone itself, yet very little if any pain may be complained of, notwithstanding the patients in such cases are generally children. The enlargement progressively increases until the part becomes greatly distorted and disfigured; redness and pain follow, indicating that inflammation is present, though rather as a consequence than as an original cause of the malady. In other similar parts, either very near to the original spot, or situated in another extremity, indications of the existence of a similar derangement make their appearance. The constitution of the patient is obviously suffering, and if the evidences of weakness and irritability had not previously become apparent, they now undoubtedly do so in other points; such as in the complexion and expression of countenance. Even the non-professional observer does not hesitate to remark, this is a scrofulous child. I need not tell you that cases depending on scrofula are both numerous and important. They are, at the same time, such as require great and continued care in their management, and exercise the patience of the sufferer and his friends, and of the medical attendant, all of whom will frequently be in danger and much discouragement. On the other hand, your successful treatment of such cases, though slowly achieved, will reward you with satisfaction as well as with the confidence and esteem of the public. You will, perhaps, expect that I should even now explain in what respect these cases differ from inflammation. It has been discovered that most of these cases are characterised by

the slow deposition of a material foreign to the different structures in their healthy condition, and distinguishable by its properties, as well as by its mode of formation, from the products of ordinary inflammation. This material has received the name of scrofulous or tuberculous matter. These terms are often employed indifferently as synonymous, but I may remark, by the way, that distinctions between them are drawn by some pathologists. They are not, however, such as should prevent our associating the cases as an important group.

There are, perhaps, no derangements which more clearly indicate the influence of tissue, and consequently exhibit the importance of general anatomy in connexion with pathology, than those of the scrofulous or tuberculous character. We may see this even in the small part of the system which I have selected for the illustration of my remarks on local affection situated in parts independent of important vital functions. Thus, in some cases, it will be observed to fix with preference on the medullary portion of the long bones of the phalanges and metacarpus; in others the spongy bones of the carpus; whilst in others it more particularly affects the structures entering into the composition of the joints. This reference to tissue is much more striking if we proceed from the hand to consider the ravages of scrofula in other parts of the system; such as the serous, the mucous, and the glandular. This, however, would be too great a digression for our present purpose. You will, perhaps, bear in mind this reference when the derangements of these tissues are brought before you in detail.

There is another highly interesting group of derangements not necessarily connected with inflammation, but with which, especially in their latter stages, inflammation is apt to be associated. A partial enlargement is, perhaps, observed to take place; it may be without any cause which can be assigned, or if assigned, it may go back to so distant a period as to leave a doubt of its connexion with the case. The enlargement is probably unattended with pain, heat, or discolouration; nevertheless it continues to increase in size, in consequence of which it claims increased attention. Various means are tried, with very little, if any, encouraging results. On the contrary, the increase of size may seem to be accelerated by the steps which are taken; a confirmed tumor exists, having a more or less nodulous or botryoidal surface, but admitting of great variety as to its degree of resistance, from the greatest hardness to the softness of adeps or fluid. It may continue for a length of time without pain, or it may be attended with pain of a sharp and lancinating character. The skin covering the

part may exhibit no other alteration than that which is merely dependent on distension, or it may be discoloured by large and tortuous vessels, ramifying in each beneath it, and injected with bright arterial, or deep venous blood; or the discolouration may be of a more diffused character, indicative of the supervention of inflammation, which, as it advances, ushers in some of the most remarkable changes which distinguish the particular class of affections now under our notice. Let us suppose that the inflammation has proceeded so far as to occasion ulceration; we may either find that this leads to a rapid increase of size, as the new growth is relieved from the restraining pressure of the superimposed skin. The case will then be called fungoid; and as the large weak vessels before mentioned are apt to give way and bleed, the term *hematodes* will probably be added to it as a further characteristic.

It may happen, on the other hand, that instead of this rapid growth following the ulceration of the skin, the structure of the new growth beneath it may participate in the destructive process, in which case a much more rapid ulceration takes place than in the natural and more perfectly organized structures; the fluid which exudes, instead of being a healthy secretion of pus, is watery, and rendered excessively offensive by the admixture of dead and sphacelated particles from the tumor, or by the morbid fluids in which they may be partially dissolved. This destruction of substance is probably analogous, though on a larger scale, to some of the spreading and eating ulcers to which I have already alluded—a fact which is rendered still more probable, if we consider the remarkable lip or margin of the ulcer which constitutes one of the striking characteristics of these open cancerous affections. It has often been observed that the edges of these ulcers are thickened, elevated, and even everted at the same time; though varying in colour, they have more or less translucency. The peculiar circumstances on which this character of the margin depends, will be well worthy of your attention at a future period; it is enough now to notice the fact. It might be imagined that such large granulations would soon contract and fill up the ulcer, which, however, continues to extend, because the new material does not maintain a permanent character, but on the contrary, gives way to ulceration. Thus, with a provision for rapid growth on the one hand, there is at least a proportionate propensity to decay on the other. Were I merely to enumerate the different forms of disease to be met with in the particular group which I am now noticing, it would be sufficient to convince you of its abundant interest and importance; but these varieties are themselves varied according to the tissue in which

they may be seated, whether the skin, the cellular membrane beneath it, or that more directly connected with tendon and fascia, whether developed immediately beneath the periosteum, or in the cancellated structure in the interior of the bone. Again, you will have to bear in mind that there are no affections which more remarkably than these exert an influence upon remote parts, and even upon the system at large; also, that this contamination proceeds with the greatest variety as to time and extent, and that there is a corresponding variety in the mode and kind of relief which it is in our power to apply.

We have now taken a glance at a considerable variety of local morbid affections in their action, either simply confined to the seat of derangement, or associated with more or less disturbance of the system generally; yet you will observe, that we have, hitherto, not considered any lesion which, from its situation, bears directly upon the exercise of any function essential to life. I might at once proceed to point out the mode in which symptoms must necessarily be modified and danger increased, when morbid changes are so situated as to produce these complications, and interfere with vital functions. But before I do so, it may not be amiss to notice certain general states of the system, by which even the local affections, situated like those which we have been hitherto considering, may be very remarkably modified. The consideration of these will, in some respects, be the counterpart of observations which we have already had occasion to make when alluding to the febrile disturbance or constitutional derangement of an acute kind which attends some of the forms of local disease at which we have glanced, and the more lingering constitutional affection which we have noticed as co-existing with others. We have now to notice the operation of an inverse influence, in which the state of the system being deranged, the local effects of a disturbing cause are more or less modified. The slight local injury, cut, pinch, or scald, which I took up as the first illustration, and which, if inflicted on the finger or some other part of the hand of a healthy person, is quickly recovered from, may have been inflicted on a person in a previously deranged state of health, and instead of a disposition to heal or get well, some of the many varieties of local derangement which have been enumerated may be set up. The slight cut or puncture may be followed by violent inflammation, and the appearance of the part itself, and the more extended derangement resulting from it, may assume all the characters associated with poisoned wounds. We sometimes meet with examples of this after puncture with a clean needle or lancet, and perhaps more frequently in the dissect-

ing-room, where, if the instrument be not perfectly clean, it may at least be free from that peculiar poison which is present in the dissection of certain subjects, and against which few, if any, persons would be proof. The cases to which I am now alluding only occur in particular persons—in persons who have been observed to have their constitutions deranged by continuance in an unhealthy atmosphere, by diminished rest, close application, or other influences connected with the town life of an individual previously a resident in the country.

Notwithstanding their important difference, the two classes of cases bear so close a resemblance to each other, that in practice they may be confounded; and I have known either view strongly advocated to the exclusion of the other; some persons denying the existence of a poison, and attributing every thing to the impaired state of the constitution; and others calling in the aid of poison to account for the symptoms, when there was reason to believe that no such poison had existed. It is possible, however, to admit of a third explanation, and there are some cases in which I should be disposed to give it a preference. The wounded part may have received no poison from the instrument by which the injury was inflicted, but the inflammation which has followed may have been sufficient to produce one in the altered textures of the part. For such an effect to be produced, we must, however, call in the assistance of the previously deranged state of the system which we are now considering, and the supposed case would only be a fresh illustration of the kind of complication which it may induce. The rapidly fatal effects of certain venereal sores which were not unfrequently seen in a peculiarly wretched and profligate quarter of this city, have received a similar explanation; and the constitution of the recipient, rather than the peculiarity of the poison received, has been the explanation sanctioned by high authority. Many such cases have been brought to the foul wards of this hospital, where they furnished the materials for a work on Constitutional Irritation, by one of the most distinguished surgeons who has been attached to this institution. There are various states of the system which tend to promote the occurrence of local disease, or to modify it when produced, which do not so obviously exist, and which are not so referable to a conspicuous cause, as in the cases which I have adduced. The constitution may not have been broken by loss of rest, anxious study, impure air, faulty diet, or a series of libertine excesses. They may be of a very different character; they may even have been transmitted to the individual by his remote ancestors; or if they have been acquired by the individual, they may be the result of causes over which he

has had no control, or they may have been the result of some previous and important disease. Hence we find these different constitutional states classed under different heads and known by different names. Thus the transmitted disposition may be either that of temperament, or of a more limited character, like the tendency to some hereditary disease. In this case it is often called a diathesis, though this term is not necessarily restricted to such constitutional disposition as is acquired by descent or born with the individual. When the peculiar state of constitution is directly traceable to some noxious agency, whether poisonous disease, faulty diet, or articles of a poisonous or medicinal character, such state of the system, which may in itself be regarded as disease, is generally known as a state of cachexia.

It will fall to the province of my colleague, in his lectures on General Therapeutics, or the Institutes of Medicine, to enter into details respecting these general conditions of the system, but more especially the two first-mentioned—temperaments and diatheses. It will, however, be right that even here I should introduce some illustration, to connect them with our present review. In that temperament which is known by the name of sanguine, and characterized by the large amount of capillaries conveying bright and arterial blood, we must be prepared to expect that the exciting causes of derangement are followed by symptoms connected with the circulatory apparatus, and therefore of an inflammatory character, or, if not absolutely inflammatory, in which hæmorrhage may be profuse. I have known of families in which this temperament existed in such an extreme degree, that it was almost impossible to stop the hæmorrhage from a simple prick of the finger, and at least one member of it lost his life from fatal loss of blood following the extraction of a tooth. In the leucophlegmatic temperament, or, as our foreign neighbours more frequently call it, the lymphatic, there is less than the ordinary appearance of blood-vessels. Parts usually much injected with red blood are very little so, producing a general paleness of complexion. The cellular membrane is infiltrated with a more than usual amount of serum, in consequence of which those parts in which this tissue is lax or abundant become swollen in a manner which cannot be ascribed merely to the presence of fat, which is often rather abundantly deposited in persons of this temperament. An injury to the finger or other part of the hand in a person of this description, may very possibly have but little either of active inflammation or hæmorrhage as the consequence, but we shall very frequently find that serum flows when blood ceases to do so, and the injury, instead of being quickly repaired, leads to an indo-

lent and obstinate wound, in connection with which the absorbent glands, situated in the course of the lymphatic vessels leading from the part, are very likely to become affected, which is, in part, to be attributed to the feeble condition, marked by pale, swollen, and flabby texture of these bodies in persons of the leucophlegmatic temperament.

Perhaps the best example of that hereditary state of constitution which is termed diathesis, is to be seen in those who derive from their parents a strong tendency to become affected with gout, to which their own temperate and careful mode of living cannot be supposed to have given them a title. Though we suppose that this tendency is born with the individual, the consequences to which it leads may be long in making their appearance, and it may be difficult or impossible to point out any fact which may intimate that it exists; yet the adequate exciting cause being once supplied, the peculiar character of the local affection, and its aptitude to recur when apparently recovered from, are admitted as proofs of its existence.

The tendency to produce tuberculous or scrofulous matter characterizes another constitutional state, which is called the scrofulous diathesis; and there is, perhaps, no other which is so generally regarded, both in and out of our profession, as susceptible of transmission from parents to their offspring, and consequently admitted to be a family infirmity, which is peculiarly dreaded, on account of the formidable diseases reputed to be connected with it, viz., all the forms of external disease, commonly spoken of as the King's evil, which are tedious in their duration, difficult in their treatment, and permanently disfiguring in their consequences. Amongst the internal affections associated with it, we have hydrocephalus and mesenteric decline in infancy; pulmonary consumption, and fatal chronic peritonitis in youth and middle age. Though it is generally hoped, when declining years have arrived, that if the affections allied to scrofula have not yet made their appearances the danger of their doing so may be regarded as past, even then a protracted catarrh may terminate in truly tuberculous phthisis; or exposure to partial cold or damp may produce glandular enlargement, having the appearance, progress, and result of scrofulous disease, as it is more commonly seen in youth. Through every period of life, the various forms of mental alienation seem more peculiarly prone to affect those in whose families the scrofulous diathesis is observed to prevail; but I must confess that the pathological grounds for this generally received opinion are not so clearly made out as to be perfectly satisfactory to my mind, although the general prevalence

of the opinion, and numerous striking facts, certainly concur to strengthen its probability.

In pointing out the distinctive characters which scrofula may give to derangement of the bones of the hand, we have had before us an illustration of the influence which the existence of this diathesis may exert upon the consequences of local injury or other exciting cause of disease. If it were not premature now to go into the subject, I might draw from this very possibility of producing local disease assuming the scrofulous character, one, amongst other arguments, opposed to the doctrine entertained by a distinguished and laborious practical pathologist, that scrofulous tubercles are congenital. That they are so occasionally must be at once conceded, but that they are frequently or necessarily so, does not appear to be consistent with facts.

The constitutional liability to any of the diseases truly belonging to the group of cancerous affections is likewise regarded as a diathesis; and though by no means forming so strongly marked a family peculiarity as in the case of the scrofulous diathesis, it unquestionably appears, in numerous instances, to be attached to families. I am not, however, prepared to admit, with some, that even in these cases it exists from birth. Though the disease may exhibit itself in infancy, or even have induced the proofs of its existence before birth, I am, nevertheless, disposed to regard it as an adventitious state, liable to be produced at any period of life. In connexion with this subject, I have, at the present time, more particularly to notice the fact, that the existence of this diathesis may give peculiar forms and characters to local diseases, however excited. Thus a little irritation applied to a previously existing wart or pimple on the hand may lead to the formation of a malignant ulcer. The irregular growth of a finger-nail may produce similar consequences at the part. A blow so slight as scarcely to attract attention may prove the commencement of a fungoid tumor of indefinite size. Similar consequences may follow injury to the sheaths of tendons, or to the bones, from which structures other growths of the same family may also take their rise; such as the carcinoma fasciculatum, and the enchondroma of Müller, though the malignancy of this last is very doubtful, and by him not admitted.

You cannot have failed to perceive the important influence which those conditions of the constitution which are designated diathesis may exert upon the development of disease, and be prepared to appreciate the more extended consideration given to this subject, as a necessary preparation for the study of different diseases in detail.

Amongst the pathologists of the new Italian school, the word diathesis is used in

a very different sense from that in which I have employed it, and which, indeed, is generally assigned to it. These pathologists regard as a diathesis that particular state of the system which exists during the actual continuance of any particular disease; but it is by no means necessary that it should have existed previously, or that it should continue to exist after the termination of an attack of disease; but as it is not admitted (by some, at least, of this school) to undergo change during the continuance of the same affection, it involves a principle so important in the application of remedial means, that I must revert to it on a future occasion.

I have before stated that, besides the general conditions of the system, which are to be regarded either as temperaments or diatheses, there are some which are termed cachexies. The two former may be regarded as favouring the occurrence of disease under certain peculiar characters, and therefore, so long as the exciting causes are not applied, can scarcely be said to constitute an existing disease.

The different states of constitution to which I now wish to call your attention constitute something more than a disposition to derangement of a particular character. The system is already so far out of order as to be in a state of disease. Though this may be brought about by the derangement of some function, and even by the disease of the organ connected with it, it is not so much the immediate symptoms of such disease, as some of the remote consequences, which we are now to consider. We have rather to keep in view the prevailing disturbance of the nutrient function, as connected with the tissues of this body generally, than the derangement of a particular function, though this may be mainly concerned in bringing about the particular condition in question. It is this general disturbance to which the name of cachexia may be applied. Two or three illustrations will, I trust, make my meaning perfectly intelligible. Nutrition, you know, cannot be performed without a supply of the blood by which it is effected. If this material be largely and frequently abstracted, we have an obvious deficiency of blood, to which the name of anæmia is given. In this state, which, if continued, becomes a true cachexia, many local derangements may arise from very slight causes; and a sore on the finger, as well as on any other part, would necessarily be indolent and indisposed to heal, presenting some peculiarities of appearance which it is not for me here to describe particularly. But the deficiency of blood may not be the only evil. The little that remains may become altered in its properties, as we see in that form of anæmia which occurs in chlorosis. Not only the

more obvious, but the microscopic characters of the blood are altered, and the power of resisting and repairing local diseases is very much reduced and modified. Again, we may have the quality of the blood altered without that striking diminution in its quantity which constitutes anæmia. Unsuitable aliment may have been supplied for the formation of chyle and blood; and this, in concurrence with other causes conducive to the same end, will lead to that form of cachexia to which the name of scorbutus has been given, and in which extravasation of blood takes place from the slightest causes. Local derangements of various kinds do not proceed in the process of repair, but become foul and intractable sores; and in extreme cases, parts which had been cured of unsoundness again become deranged.

ON THE

DUTCH MEDICAL INSTITUTIONS.

To the Editor of the Medical Gazette.

SIR,

HAVING perused in some late numbers of the *MED. GAZETTE*, (Nos. 777-8, and 781) the communications of your correspondent Mr. Edwin Lee, upon the Dutch Medical Institutions, and having recently, like him, "made a few days' tour in Holland," I shall be obliged by your inserting the following remarks in your valuable miscellany.

I received so much professional civility in that country, was so much pleased and interested with what I saw, and, upon the whole, was so differently impressed from your correspondent, that I feel urged by gratitude, not to say by justice, to communicate my impressions. Not that I shall write a word in the spirit of opposition or of controversy. The observations, I trust, may not be devoid of intrinsic value, and may, moreover, interest your readers, by supplying a few hints regarding the present state of the science in a country whence our own has derived important professional benefit in former times, and whence useful information may still, I believe, be obtained. The hints I shall draw mainly from my note-book, written in haste, and with no view to publication.

Amsterdam.—The morning after my arrival in Amsterdam, I was greatly disappointed upon learning that the Professors Frolick, father and son, to whom alone in this city I had letters,

were from home; and the more so, as I understood that the museum of the latter gentleman contains much that is worthy of attentive examination. Under these circumstances, however, my conductor, the *valet-de-place*, was fortunately at no loss, undertaking at once to introduce me to Professor C. B. Tilanus*. We immediately called on him, learned he was from home, sought him at the hospital of St. Peter, in the middle of the town, to which he is attached, and found him in one of the wards paying his visit, and surrounded with eight or ten *eleves*. Upon the introduction of the *valet-de-place* he received me graciously, and prosecuted his round. I was greatly astonished at the immense number of beds (about 70) set close together in the same ward, crowded, I should have said, to great excess. Having had my attention lately directed to the subject of hospital miasma, I was the more alive to this state of matters. I may here, therefore, remark, in passing, that Professor Graham, at the close of last session, introduced the topic to the notice of the Edinburgh Medico-Chirurgical Society, in relation to the great mortality that occurs from typhus fever in many of our Scottish towns. His very extensive experience of the disease, both in Glasgow and Edinburgh, has led him to the conviction that the plan of crowding numerous fever patients into wards and hospitals appropriated to that purpose, under the idea of guarding against the more general ravages of the complaint, so far from gaining the object intended, not only frustrates it, but, moreover, brings most injurious consequences along with it, from the injudicious method in which the plan is conducted. He contends that, by thus overcrowding fever cases within narrow limits, the morbid poison acquires a virulence which acts not less conspicuously than fatally upon physicians, clerks, students, and nurses, in immediate attendance, but also upon the multitudes who must come casually within its range, and who, after being affected, commingle with their relatives and friends in their own dwellings, so

widely propagating the disease; while the sad effects upon the poor sufferers constantly exposed to its influence, in these highly infected localities themselves, cannot easily be estimated. Instead of this system Dr. Graham proposed to substitute that followed so successfully at Guy's, and others of the London hospitals, of locating these patients in the wards exactly as the others are done, with the exception that care be taken that the number of typhus cases be never allowed to exceed a small proportion to the others, whereby, an average degree of ventilation being maintained, the poison is so diffused and weakened, that few, if any, injurious effects follow. But I must not dilate upon this point, and conclude by remarking, that the subject comprehends much more than the prevalence and mortality of typhus; that it includes that scarcely less fearful scourge erysipelas, also hospital gangrene, and other complaints; so that it is nearly impossible for a medical man to enter a hospital without having his attention directed to these most important topics.

And now to resume. I soon demanded of Professor Tilanus if they were not molested with infectious disorders? To which he replied, "Not at all." Upon inquiring into the cause of what appeared to me a most extraordinary anomaly, he assigned as the principal reasons, the climate, the lofty roofs of their wards, and the great attention which they paid to ventilation. The influence of the first cause assigned did not at once occur to me as very apparent, but upon further conversation it resolved itself into the fact--and a cause may be involved--that Holland is more exposed to fevers of an intermittent than of a continued type. The power of the other two causes I could readily comprehend. The slightest glance was sufficient to shew that this great establishment had originally been built not for the purpose of a hospital, but for some other use: if I remember right, it had been some great convent, or other religious institution, and had been converted to the purposes it now subserved. Its appearance, therefore, was something very different from what we are familiar with in regular built hospitals. The loftiness of the roof struck me as something altogether out of proportion, and as if two stories had been thrown into

* In Holland, and some parts of Germany, the title of professor is not confined to those who are connected with a university, nor even to teachers recognized by some competent authority. I need scarcely add, that Amsterdam, though the principal city, is not the capital of the kingdom, and is not the seat of a university.

one, which, whilst it seemed uncomfortable, and had its attendant disadvantages, might at the same time not be without its corresponding benefits. It could not but contribute greatly to the important item of ventilation; and this, with the national virtue, carried often, I believe, to excess, and which must be seen, ere it will be credited, cannot fail to operate powerfully. The beds consisted of deep wooden boxes, with abundance of bed clothes, as well as curtains; and this in the oppressive heats of summer; and yet, according to the Professor, they had no vermin: no ordinary proof of Dutch cleanliness. Prof. Tilanus informed me that *typhus*, such as we were familiar with in Britain and Ireland, was nearly unknown among them; that they rarely saw the disease described under that name, so prevalent in Edinburgh and Glasgow; and not more frequently in the hospital than beyond its precincts. That they sometimes had what he called *typhoid* fever, by which he understood fevers with a low or typhoid type, he meant not to deny; but then they did not spread, nor were they a serious source of mortality. Tilanus is surgeon to the hospital; and he stated that they were quite as little annoyed by *erysipelas*, and not more by *hospital gangrene*. It was now fourteen years, he informed me, since he undertook the duties of his office: he succeeded to an individual advanced in years, and who had not perhaps exercised all the vigilance which was desirable; at all events, under his regime the last named disease had been both prevalent and fatal; and it was not till after the space of two long years, and only with infinite care, that he (Tilanus) at length succeeded in eradicating the complaint. But from that day to this they had seen none of it; and he might say quite as much of contagious or troublesome *erysipelas*.

In leaving the hospital at a subsequent period with the Professor, I saw the best part of a dozen of male convalescents, busy, after the Dutch fashion, with brush and pail, in scrubbing some of the outer passages; and there can be no doubt that all the interior parts of the premises receive a double portion of attention. The patients, I think he said, were in number from five to six hundred.

Professor Tilanus also conducted me to a pathological museum connected with the hospital, of considerable extent, and to which they were evidently making many additions, undoubtedly to the great additional interest of all the medical officers concerned. The preparations appeared to be made with skill and judgment. I inquired if they had any specimens of the united fracture of the neck of the thigh-bone within the capsule, and he immediately showed me two dry and one moist, which had a distinct compact line of ossification running across, very close to, and partially through, the head, which he regarded, and, as it seemed to me, correctly, as unequivocal cases of the kind.

Professor Tilanus advised me to see another hospital belonging to the town, and situated beyond its precincts. Thither, accordingly, I went, and was very favourably impressed with G. E. V. Schneevooft, doctor of medicine, surgery, and obstetrics, finding him a very pleasant, intelligent man, apparently about the age of twenty-three, but really, as he told me, thirty. He is the resident paid physician, and has held the office some three or four years. In this institution there are four classes of patients—common medical and surgical, lying-in women, insane, and syphilitic. The building, like that of the city hospital, was not constructed for a medical establishment, and hence Dr. Schneevooft considered it, in many particulars, very objectionable. It had the same immensely long wards, conveying the impression that you could not see from one end of them to the other; and the same high roofs, which the doctor stated were very hot in summer, and very cold in winter. At the moment the swallows were flying freely about them, coming and going in considerable numbers. The beds were generally touching one another in pairs, being boxes, with curtains, running quite round the walls, with sometimes an additional row of beds in the middle of the ward. Dr. S. greatly objected to the two beds being together: the restlessness of the one patient often very much disturbing his neighbour. Against this and other objectionable particulars he had often exclaimed to the ruling authorities, but hitherto without success; finally, however, he hoped for better things. Here

there was a rare and fair field for investigating how far hospital miasma could be dissipated and controlled.

Dr. Schneevoegt was engaged in his usual round when I entered, and politely asked me to accompany him. With his carriage, and attention to his patients, I was much pleased, kind and yet firm; and nothing of his practice certainly occurred within my observation as objectionable. We spent a considerable time in the wards for the insane, and many minute inquiries were made as to the state of the unfortunate inmates. We went from ward to ward, and bed to bed, as in the other departments of the hospital, and listened to the tale of many a poor sufferer. Some, too, we saw sufficiently violent, to use no harsher term; and the doctor's calm self-possession, and authoritative yet mild tone and demeanor, struck me as admirable. I did not see one patient under physical restraint. The keys of certain doors were entrusted to some, and a variety of trifling subordinate duties to others of the convalescents; and the intimate acquaintance of the attendant with the cases under his charge, and their respectful and confiding bearing towards him, impressed me strongly with the mildness and judiciousness of his treatment. Their out-door accommodation was very confined; but many were there amusing themselves. I was also gratified with the lying-in department. A group of eight or ten, in expectancy of their confinement, sitting round a table, and busied with their needles in preparing baby and other linen, under the nurse's superintendence, was interesting. Dr. S.'s testimony as to the occurrence of infectious disorders in his hospital differed somewhat from that of Professor Tilanus in the city one. The crowding of this institution struck me as greater than in the other, although the number of patients was somewhat less. He informed me that they sometimes had erysipelas of indigenous growth and fatal result: not, however, to a great extent, nor as a frequent occurrence, but yet quite enough to require all their circumspection. This was likewise true of typhus, though to a less extent; the prevailing type of fevers being intermittent. The cases of typhus were never separated from the rest, nor ar-

ranged by themselves; and its spread was never considerable. Dr. S. was educated at Leyden. His courtesy could not have been exceeded; and, upon the whole, he appeared to me a fine specimen of a sensible physician, kind, and well informed withal.

In concluding these brief observations concerning these Amsterdam hospitals, I may remark, in one instance, that the data supplied by them regarding typhus and other infectious disorders corresponds with those I obtained in other places upon the continent, all making against the plan of congregating the cases together, and in demonstrating the innocuousness of having them commingled, within certain limits, among patients with other and different diseases.

Utrecht. — Before taking leave of Professor Tilanus, I requested him to favour me with a letter of introduction to Utrecht—a demand with which he immediately complied, furnishing me with one to Dr. J. L. C. Schroeder van der Kolk, professor of anatomy and physiology in the University, and which abundantly met all my wants. I called upon the Professor the morning after my arrival in that fine old city between eight and nine o'clock. At first I was afraid there might be some difficulty as to our medium of communication, he having as little English as I had Dutch; his French, too, was meagre; but, on his adopting the Latin, with all its peculiarities of pronunciation, and I the French, we got on most satisfactorily. He at once inquired how he could most promote my views; and on learning that I was particularly interested in whatever concerned the diseases of the eye, he ushered me into his private museum, which, though not very large, appeared select, and, I should think, valuable. He turned to the section containing preparations of the eye, and immediately began to expound his views concerning some of the diseases of that organ. He always began his demonstration with the healthy structure, and followed it up with the diseased; an excellent method, which he insisted was the only true one. His preparations of the eye upon these shelves were not numerous, but truly beautiful, quite maintaining the high character of the Dutch school. A very

few details will prove this. He first shewed me an injected retina preserved in spirits, the arteries being red, the veins white, and I easily recognised them freely anastomosing with each other. He then put into my hands a preparation of the human adult eye, in which, with the help of my glass, I could easily recognise the long and short hyaloid vessels, *vasa longa et brevia membranae hyaloideae*, the former ranging from the posterior part of the membrane forwards, the latter taking their origin from the zonula Zinnii. I forget not that recent anatomists tell us—to quote, for example, Mr. Dalrymple—“that in the adult eye no blood-vessels are perceptible in the vitreous body; our most successful injections having totally failed to give colour, even in the slightest degree, to this structure.” (Anal. of the Human Eye, p. 113.) Not so, assuredly, in the Ruyschian injections of Professor Vanderkolk. He probably at the same time admitted, though I think we had no conversation on the point, that those vessels which, in the normal state, conveyed colourless fluid, had, under the act of injection, received the coloured particles. He then shewed me, in the fetal eye, the long artery of the lens, coursing from the point where the optic nerve enters the globe to the posterior surface of the capsule of the crystalline, and stated that never having been able to inject the vessel in the adult, he hence inferred positively that even in the earliest years it faded and disappeared. Its presence, containing red blood, would, he contended, interfere with the perfection of vision. He said nothing of Cloquet’s *hyaloid canal*. Another preparation, beautifully fine, most distinctly exhibited with the glass countless very fine vessels passing from the *zonula ciliaris* to the anterior capsule of the lens, and quite covering it with the finest gossamer net-work of red vessels: this, he stated, was an injection of the parts in their normal condition; and, once more, for I must bring these details to a close, in another preparation I saw equally distinctly the vessels of an eye which had previously been healthy, running from the tunica adnata, over that portion of the organ which covers the surface of the cornea.

After such anatomical demonstrations as these, the Professor proceeded

to pathological illustrations: and first, from a preparation he put into my hand, contended that the contagious, or *Egyptian ophthalmia*, was essentially a disease arising from an inflammatory condition of the Meibomean glands. The preparation, at all events, was a striking one, and having no recollection of ever seeing the like elsewhere, I shall describe it. It represented what the Professor stated to be a pure instance of the diseased state of the above-named glands, their texture alone being implicated. In the specimen they appeared distinctly in the form of a thick mass of glands, entangled and matted together, yet retaining much of their regular bead-like form, lying upon the inner surface of the upper eye-lid. The mass must have been nearly a quarter of an inch thick, and extended from one end of the lid to the other. The history of the case had been, as above stated, one of protracted and distinct Egyptian ophthalmia, and that the phenomena occurred in such a case it would be unwarrantable to deny. But that this disease of these glands constitutes, in the ordinary run of contagious ophthalmia, the parts primarily and essentially implicated, is far from clear; and the opinion may be a proof only of hasty generalization. In speaking subsequently with Professor Wurtzer, of Bonn, who has had abundant opportunities of recently investigating the disease as it occurred among the Prussian troops on the Rhine, he informed me that in all his researches he had never seen such a pathological phenomenon; a remark confirmed by my own previous observation in the many cases I watched in the hospital of the Military Asylum at Chelsea, and which may be substantiated by the experience of many other medical men. Upon the subject of *glaucoma* the Professor was still more copious and impressive, taking for his text another very valuable, but also, I should think, somewhat rare preparation, and making it to stand as the type of all glaucomatous affections. This specimen consisted of a section of the eye in the antero-posterior diameter or axis, whereby there was exhibited a very considerable effusion, on both sides of the optic nerve, of coagulable lymph, *lymphæ plastica*, in various detached portions between the choroid coat and the retina, whereby they were very

considerably separated in that part of the globe, and the retina, with the vitreous humour, was compressed, puckered, and distinctly forced forward. Reasoning from this state of parts, he argued, that glaucoma consists essentially of an inflammation between the choroid and the retina, and chiefly of the former, so that the latter is displaced and misshapen, appearing concave when minutely examined by the oculist, and so is rendered unfit for discharging its important functions; the greenish colour being nothing more than the effect produced by the lymph, as seen through the vitreous humor. The choroid and sclerotic are necessarily somewhat compressed by this morbid process, and hence the dull pain which usually is attendant upon the complaint. In short, there were none of the phenomena of the disease which the Professor's ingenuity did not enable him to explain upon this hypothesis, which it would be out of place to discuss here, and which I shall therefore leave to the reflections of the reader.

But minute, and unique it may be, as some of the Professor's preparations are on the structure and diseases of the eye, I felt they yielded in interest to others bearing upon the history of the lymphatics. I here allude to their existence not in any normal structure, however minute, but in new and abnormal parts, such as in the effusions and adventitious membranes which inflammation often leaves between the separate layers of serous membranes, and where, beyond dispute, they must be newly-formed lymphatics in parts themselves new! All this I saw most satisfactorily made out. The first preparation placed in my hand was of this nature. The pleura, on its sacral aspect, had been inflamed, had thrown out coagulable lymph, which, by a considerable bridge, connected it with a part of the diaphragm. The surface of this connection was not less than an inch or two in extent, and the bridge varied from a quarter of an inch to an inch in length. The lymphatics of these parts having been injected with quicksilver, the vessels of this system belonging to the lungs and pleura were very conspicuous: not less so those of the diaphragm; and thirdly, not less apparent than either, were distinct beaded lymphatics running along the effused membranes connecting the two

normal tissue. As in this portion of the pleura, so it was equally conspicuous in another preparation—a case of lymph effused between the pleura costalis and pulmonalis, the bridge crossing like a regular bridge, and in this evidently adventitious membranous bridge were the lymphatics coursing their way as conspicuously as in the other parts. Avoiding all disquisition upon this truly interesting point, I continue the short, it may be meagre, notices of my notes. Are these specimens unique, and is this demonstration new? It is to me; and the Professor evidently considers it as a discovery.

It would appear that I had not inquired of my intelligent informant if he had discovered any lymphatics in the eye; an omission I the more regret as it is stated by Muller that no lymphatics have been yet discovered in the interior of the organ; and by Mr. Dalrymple, that at present there is no positive proof of the existence of absorbent vessels in the globe, nor indeed of any other than certain minute granules occasionally observed at the inner side of the lachrymal gland. Under these circumstances, I shall be excused for quoting a sentence from another page of my note-book under the head of Heidelberg. In casually examining Professor Tiedemann's museum, my attention was attracted by a preparation of the eye in which the lymphatics of the cornea were beautifully injected with quicksilver. An appearance of this sort may, I know, be fallacious, and therefore I the more regret I had no conversation with the learned Professor on this interesting preparation. Here I must now leave the matter, in the hope that renewed attention may be directed to the subject.

After several hours thus most kindly devoted to my service, Professor Vanderkolk begged my acceptance of two small Treatises, the one by himself, in Dutch, on some of the Diseases of the Eye; and the other a Thesis, in Latin, embodying his discoveries concerning new vessels, arteries, veins, and lymphatics in pseudo-membranes, by his pupil, Dr. Lespinasse, and published in Utrecht during the present year. He moreover indicated those objects in the city which he regarded as most worthy of my attention, and which, in addition to the Touris Hospital, con-

sisted of the Military Hospital, under the able care, as he expressed it, of Dr. Kerst, and the Veterinary School, the only one in Holland, and which he considered as excellent, and also the Museum of the Academy, or of Blue-land, and that of Professor Lidth, devoted chiefly to natural history. The Museum of the Academy, having Blue-land for its founder, has been established, and is very much maintained at the government expense, and merits the highest encomiums. The specimens are very numerous, and exceedingly well prepared; and those in wax, coloured to the life, and consisting of human and comparative anatomy, as of fishes, birds, &c., carefully dissected, are not the least striking. Among others were three series illustrating the evolution of the young bird in the hen, duck, and goose, each amounting to twenty-one in number, and well exhibiting what art can do. But I must not dilate; and the more so that circumstances very much prevented me from availing myself of those facilities which were every where promptly afforded.

Leyden.—At Leyden, whither I went without any introduction, I was greatly delighted with all I saw; including the Botanic Garden, the Antiquarian Museum (Egyptian and Etruscan), the Comparative Anatomy Museum under Sandiford, and, most of all, the Natural History Museum, under Tomminck, which last so engrossed my attention that it left me but little time to inquire after other objects I should liked to have seen. All I witnessed appeared in high order, and admirable in its kind. It would be out of place to dwell here upon the wonders of the Natural History Museum, which, though not originated by the great Temminck, has assuredly been much indebted to him for its present richness and splendour; and to which he is still adding as fast and as much as ever. It impressed me at the time as being one of the finest I have seen in Europe; a remark which my recollection of the Paris one, and my subsequent observation throughout Germany, do not invalidate. The whole specimens appeared to be accurately arranged according to the Cuvierian classification, from man downwards; and it seemed as rich in skeletons as in stuffed and

wax preparations. One of the *employés* in the museum informed me, (for the great naturalist I missed seeing,) that their lists of specimens of animals amounted in all to 127,692, not including eggs, nests, minerals, &c. The Comparative Anatomy Museum connected with the University, including human, healthy, and morbid, is also a fine collection, though infinitely beneath the preceding. Several of its preparations attracted my attention as singular; but with notices of these I will not trouble you.

I perceive by Mr. Lee's account, that he considered that obstacles were here thrown in his way of visiting the hospitals, an experience which he moreover states is by no means unfrequent; whence he infers there must have been much to conceal; and from this and other circumstances, he concludes that the sciences must be in a very backward state throughout Holland. For the reason just hinted at, I cannot speak to this point: I made no attempt to visit the hospital, and could therefore meet with no rebuff. Such treatment, after that which I received at Amsterdam and Utrecht, would indeed have surprised me; and after this, and my whole experience being of a uniform and contrary kind, I cannot quite dismiss the suspicion that the learned gentleman's criticism may be somewhat too hasty, as well as too general.

Your valuable periodical, sir, I doubt not finds its way into Holland, where every thing especially bearing upon the native institutions, if I may judge from instances I have elsewhere noticed, is received with intense interest. The experience and remarks of Mr. Lee were certainly not of a very flattering character: and on the contrary, expressive of dissatisfaction, not to say of censure. The experience of others, however, may be different, and as for my own, your readers must agree in thinking that after being the recipient of so much courtesy and kindness in my passing visit, and which could have been rendered for no personal merit, but solely from my professional standing as a British practitioner, I should be sadly wanting in correct feeling if I did not embrace some opportunity of endeavouring, in the name of that profession to which I have the honour to belong, as well as in my own, to return not only my cordial thanks for so many

civilities, but also to express my deep sense of many obligations, and likewise to reciprocate those sentiments of urbanity and kindness with which the English traveller is so generally greeted on the Continent, and which, along with the free interchange of professional opinion and experience, are so abundantly calculated to invigorate our minds, and advance the best interests of science.—I am, sir,

Your obedient servant,

ROBERT HAMILTON,

One of the Surgeons of the Edinburgh
Eye Infirmary, &c.

Dec. 1842.

CASE OF MOLLITIES OSSIIUM.

To the Editor of the Medical Gazette.

SIR,

FINDING that the case of mollities ossium, which I detailed at our last evening meeting, has excited some interest in the medical profession, I have forwarded to you the particulars of the case, as I read them on that occasion. As I am anxious to investigate the causes of this peculiar disease more narrowly than I have yet had the opportunity of doing, I shall feel greatly obliged by any information which any of my professional brethren can afford me. There is one circumstance, which must strike every one in reading the case, namely, that the nature of the disease was not even suspected until she came under the care of Dr. Conolly and Dr. Davey—that is, about six months prior to her decease—though the disease must have existed at least ten years.

Your obedient servant,

SAMUEL SOLLY.

1, St. Helen's Place,
Dec. 26, 1842.

C. S., a young woman, born 1813, of healthy parents, both of whom are now living and well; the mother aged 61, the father 66. She lost one sister at the age of 21, of apoplexy; and a brother at the age of 38, of diseased liver, and some affection of the head.

The subject of the present case enjoyed a good state of health up to the age of 16; was well developed, and inclined to be corpulent: her mental faculties were remarkably acute: at this early age, 16, she held the situation of governess in the family of a Colonel in the Army. Soon after she was 19

she had an attack of scarlet fever, and from this period her health declined, and she lost flesh: about two or three years afterwards, that is, at the age of 22, from a very slight cause, merely lifting a stool, the clavicle was fractured, and never united again. It must have been previous to this accident that the disease in the bones commenced, as the facility with which it gave way demonstrates its prior existence. It is of course impossible to say how early the softening took place; therefore, probably a year at least, before this occurrence of the fracture.

She now complained of violent pains in her back, and began to stoop, and could not support herself in the upright posture for any length of time. A whitish sediment in the urine was observed, with a frequent desire to void it, which was occasionally attended with pain. Her spine began to yield about the age of 24 or 25: at this time she had paralysis of the right hand, which took place suddenly, and lasted about 14 days. She had no medical advice. A visit to Gravesend was proposed by her friends for the benefit of her health, but in crossing King William Street she slipped and fell, striking her knee against the curb-stone: for this accident she was admitted as an out-door patient at the Western Dispensary, where she remained about six months, after which a visit to the sea, and bathing the knee with salt water, restored the limb sufficiently to enable her to walk. After her return home, she followed the employment of keeping a school; but became nervous and desponding. Her friends remarked great difference in her manner; her disposition seemed changed from an open and amiable temper, to one of restlessness and suspicion. They became fearful that she was going out of her mind. She still, however, continued to conduct her school with her usual attention and care.

In May 1839, being exposed to damp, she had an attack of acute rheumatism, when she was placed under the care of Mr. Dutton, of York Street, Bryanstone Square.

She was confined to her bed for six weeks, and during the course of her disease she complained very much of pain over the head, but particularly at the posterior part. She was occasionally violently delirious. At the ap-

proach of convalescence mania set in, and during its existence she seized a temporary opportunity and attempted to commit suicide.

In August 1839, she was removed to St. Luke's Hospital. At this time her general health was better than it had been for some time, and her appetite was good; but the catamenia had ceased for about three months. She was much deformed at this time about the hip and shoulders, but not in her extremities. Her mother states that she was able to walk for about six months after her admission in the hospital, though suffering a good deal of pain; her mind was improving, and hopes were entertained of her speedy and total recovery, when she slipped down, and suffered much at the time, but there was no fracture, and the injury was considered of so slight a nature that the surgeon of the institution was not consulted about it. But from this time the mother states that she was not able to stand alone; she was carried about, or pushed herself from place to place on her haunches; and though she frequently screamed violently, as if in pain, she had no fit, nor did she lose her senses; she was not unruly, or at all maniacal; she used to work with her needle in her usual quiet manner. I cannot help thinking that at this time the softening progress of the disease affecting the condition of the lower extremities was the sole cause of her inability to walk.

The head was now first observed by her mother to be enlarged, and the eyes to project: this was the effect of the thickening of the walls of the orbits. After remaining in St. Luke's thirteen months, she was discharged incurable, but not paralytic; on this point I took care to assure myself particularly. From this hospital she went to the Marylebone Infirmary, where she remained five weeks; from thence she was removed to the Islington Infirmary, where she remained two months; but I have not been able to gain any particulars of importance regarding her condition in these institutions. She was then sent to the Lunatic Asylum at Hoxton for six weeks; was again received into the Islington Infirmary, from whence she was sent to Hanwell on the 11th of April, 1842.

At the time she was received into this asylum, she was much emaciated and enfeebled, with loss of power in her

lower extremities; and two or three months before her death, the bones of her extremities were observed to lose their natural direction, and become curved; subsequently, fractures took place from the slightest causes. She suffered excruciating pain during the whole time she was in the asylum, which she referred to her bones; she did not suffer from spasm of the muscles, as many of these cases do, and the urine, during the whole time she was at Hanwell, was clear and natural. Her appetite was good, and all the functions duly performed, with the exception of the catamenia.

Large doses of morphia and other sedatives were administered to procure sleep and relieve pain.

Her mental aberration was extremely slight.

Her sufferings were terminated by death on the 28th Oct. 1842.

Post-mortem examination of the body.

Hanwell, Oct. 29th, 1842.—*Height*, measured after death, 4 feet 2 inches; great emaciation. *Head* large in proportion to the size of the body; *chest* very much deformed, pinched up, and projecting anteriorly, very narrow from side to side; the ribs appeared widened; *pelvis* extremely narrow; *spine* curved forwards, almost at a right angle in the upper dorsal and cervical region.

Extremities: both clavicles broken, and bent at an acute angle. Head of the humerus swollen; shaft of the left broken and bent; radius and ulna slightly swollen, the right radius broken; lower extremities enlarged at the epiphyses; ossa femora, on both sides, broken, that on the right side in one place, that on the left in two; tibia and fibula, on both limbs, bent; all the bones of the extremities could be fractured with the slightest force; by merely pressing them between the finger and thumb, they gave and cracked like a thin-shelled walnut. A section of the long bones showed that the osseous structure of the bone was nearly absorbed, a mere shell being left. The interior was filled with a dark grumous matter, varying in colour from that of dark blood to a reddish light liver colour: I could not detect any pus globules in it under the microscope. The bones of the vertebral column and ribs were similarly affected. Cranium very much thickened, and at

least half an inch in diameter, so very soft as to be easily cut with a knife, and very vascular; the two tables were confounded, and diploe obliterated. Thin slices of the cranium, under the microscope, showed that a considerable alteration had taken place in its ultimate structure. The laminated structure of both the outer and inner tables was extensively absorbed. The Haverian canals enormously dilated, and the osseous corpuscles diminished in quantity. Joints all healthy; cartilages perfectly natural.

Weight of brain, 2lbs. 5½oz., arachnoid membrane milky, and slightly thickened; brain healthy; viscera of chest perfectly healthy; abdomen ditto.

*Chemical analysis of the bone by
Dr. Leeson.*

Medulla.	
Animal matter	24.78
Phosphate and Carbonate of Lime	1.83
Water	73.39
	<hr/>
	100.00
Bone.	
Animal matter	18.75
Phosphate and Carbonate of Lime	29.17
Water	52.08
	<hr/>
	100.00

OBSERVATIONS ON
DR. WILLIAM MULLER'S EXPERI-
MENTS ON THE EVOLUTION OF
ELECTRICITY FROM THE
HUMAN BODY.

To the Editor of the Medical Gazette.

SIR,

AMONGST the "Selections from the American and Colonial Journals" which appeared in the last number of the British and Foreign Medical Review, some experiments by Dr. W. Muller are noticed, which are assumed to indicate "a relation between bodily motion in a particular direction, and a copious evolution of electricity." Having repeated the experiments in question, attending carefully to the circumstances necessary to their success, I have been led to attribute the developement of the electricity to a very different cause from that implied in the article referred to.

The detail of the experiments, as

quoted in the Brit. and For. Medical Review from the Medical Examiner, is as follows:—"Place the electrometer on the mantel-piece over a good fire. Take a common-sized chair, with a back to it, of such a height, that the feet resting on the floor the thighs shall be horizontal. Sit towards the front edge of the chair, and lean back, so as to have the trunk of the body quite relaxed; then rise quickly, and touch the cover of the electrometer. The leaf or leaves will scarcely fail to indicate the presence of electricity. If the first trial should fail, it will be owing to the non-observance of some of the above-mentioned conditions; a second or third *must* succeed. The electrometer may also be placed on a table before the fire: the experimenter, seated, as described, on a chair near it, may place his hand on the cover, and then, after leaning back, he should lean a little forwards and rise quickly, or but partially assume the erect position. At the instant of rising, and very often at that of sitting down after having risen thus, the electrometer will indicate a large amount of electricity. I have charged a jar with as much as could be detected by the instrument by thus alternately rising and sitting. * * * I have hitherto found my electricity positive, and have a suspicion that the electricity is different according as I rise up or sit down. This shall be decided by future experiments. Prevost and Dumas pretend to have shown that electricity is produced during muscular contraction, and Edwards has shown that the same bodies which do or do not conduct electricity, do or do not conduct nervous power, but no one, till now, has observed the relation which exists between bodily motion in a particular direction and a copious evolution of electricity." (Medical Examiner, No. viii., Feb. 1842.) On performing the experiments above described, with the precautions indicated, I found, on applying my hand to the electroscope, that a considerable amount of electricity was extracted, as stated by Dr. Muller. I then employed my arm in very violent muscular exertion, and immediately placed my hand on the electroscope, but without the slightest indication of the development of electricity. Then walking briskly up to the instrument, and placing my hand

suddenly on the brass cap, the gold leaves could be observed sensibly to diverge, which effect was more apparent on running suddenly up to the instrument, and touching the cap. From these experiments it appeared that the electricity was developed during the muscular movements of the trunk and lower extremities; but not during the action of the muscles of the arm—a circumstance sufficiently anomalous to lead me to infer some fallacy in the observations, and to suspect that the extrication of the electricity might be due to the friction of the clothes against the hair cushion of the chair in the act of rising, as well as in running, walking, &c.

To ascertain the truth of this conjecture, I repeated the experiments, with all the conditions enjoined by Dr. Müller, with the exception of substituting a chair with a *cane seat* in the place of the horse-hair one, and a piece of *floor-cloth* beneath my feet instead of allowing them to rest on the carpet; and on rising, in this instance, *not the slightest extrication of electricity was to be observed*. I then walked and ran on a piece of floor-cloth; but on placing my hand suddenly on the electroscope as before, no divergence of the leaves ensued. Thus far, then, the experiments seemed to show that something more than mere “bodily motion in a particular direction” was necessary to effect the divergence of the gold leaves, and appeared to lend considerable confirmation to my conjectures respecting the cause of this phenomenon. Being anxious, however, to determine the question in a still more decisive manner, the following experiments were made. Taking an ample fold of my coat in my hand, and sweeping it suddenly over the hair cushion of the chair, I applied it immediately to the electroscope, when the leaves instantly diverged, indicating, in the most delicate manner, the slightest movement of my foot, so long as it touched the carpet; but if the *same muscular movements* were employed by swinging the limb backwards and forwards, taking care to avoid its grazing the carpet, no electricity was evolved. These experiments were then repeated with the cane chair and floor-cloth, but without the slightest manifestation of electri-

city; thus demonstrating, I apprehend, most conclusively, the true source of the electricity in Dr. Müller's experiments to be no other than friction of appropriate surfaces—one of the ordinary means of producing electrical excitation.

Whilst the above-mentioned experiments can by no means be admitted as evidence against the possibility of the development of electricity by the human body, they must be regarded, for the present at least, as altogether vitiating those on which Dr. Müller has founded his inferences; for the same reasoning that would ascribe the divergence of the gold leaves, in the instances stated, to “bodily motion” (by which, of course, muscular motion is implied), might as legitimately be employed to prove that the electricity extricated by drawing a stick of sealing-wax through silk, depends, not on the friction of the surfaces of the wax and silk, but on the contraction of those muscles of the arm by which the movements necessary to the operation are accomplished.

I am, sir,

Your obedient servant,

JAMES H. PRING, M.D.

Bath, Dec. 24, 1842,

ON THE NATURE AND CURE OF BLINDNESS PRODUCED BY OIL OF VITRIOL.

By ROBERT D. THOMSON, M.D.

Conductor of the Laboratory, &c. of the Classes
of Practical Chemistry, in the University
of Glasgow.

(For the London Medical Gazette.)

At the meeting of the British Association, which met at Glasgow in 1840, the author proposed an operation by which he considered that blindness and opacity of the cornea, produced by the action of sulphuric acid, might be remedied. This view was founded on the following considerations. The basis of animal matter, according to the most recent researches of chemists, appears to be a substance termed protein, consisting of $C_{40}H_{31}N_5O_{12}$ which can be readily prepared from albumen, fibrine, &c. by solution in caustic alkali and precipitation by acetic acid. This substance appears to be a base, and combines

with acids. When sulphuric acid is brought in contact with it, a fine white substance is formed, which may be obtained in the state of a white powder, by careful washing and drying. It may be conveniently produced by saturating the crystalline lens of the eye in a mortar along with sulphuric acid. This acid is termed *sulphoproteic acid*, and its formula is $\text{Pr} + \text{SO}_3$. The conjunctiva, the membrane which covers the cornea, a transparent part of the eye, contains as its basis *protein*. If we therefore bring sulphuric acid in contact with this membrane, *sulphoproteic acid* is formed, and opacity of the transparent cornea takes place. This is the result when, by accident or intention, sulphuric acid falls, or is thrown upon the person. It was a case where a corrosive liquid was thrown criminally at the head of a woman, that attracted the author's attention to the subject. He found, by making a series of experiments upon the eyes of dead animals, that when sulphuric acid is applied to the cornea, a layer of sulphoproteic acid is produced, which may be removed by means of a sharp-edged knife; and that even after dissecting off the first layer, a second application of the acid will produce a new layer of sulphoproteic acid; which may be excised, or torn off in a similar manner; and in this way, that the whole of the cornea may be successively divided into a series of layers, corresponding in some degree with the natural structure of that membrane. This method presents, in short, an excellent mode of demonstrating anatomically the layers of the cornea. Having found that the opacity was completely removed by the excision of the layer of sulphoproteic acid on the dead animal, it was conceived that the idea of performing the operation upon a living animal was justifiable. Accordingly a dog was selected as the subject of experiment; it was properly secured on a table, and a muzzle was applied, so as to prevent it from using its teeth. It was considered also that it should be kept as steady as possible, in order to give a fair chance to the experiment. The end of a glass rod dipped in vitriol, was rubbed over the transparent part of the eye; white opacity was produced in a few seconds. The action was allowed to continue for two minutes, the eyelids being carefully kept aside, in order to

prevent the acid from extending to the mucous membrane of the eyelids; a piece of lint dipped in a solution of carbonate of soda was then applied to the eye, and the animal left at rest for five minutes. On removing the lint the cornea presented a white appearance, and was obviously quite opaque. Having secured the eyelids, the conjunctiva was removed by means of a pair of scissors, assisted by a scalpel and forceps, and the denuded cornea was then scraped by means of the scalpel, until it appeared to be deprived of its white opacity. A slight degree of dulness remained, which appears to have proceeded from the exudation on the surface of the cornea; for in a day or two the perfect transparency of that membrane was restored, and the animal lived for many weeks, with complete vision of the eye. Dr. Krauss, of London, who assisted the author in the experiment, and to whom the dog belonged, satisfied himself that the eye which had been operated on retained as perfect vision as that of the other eye, until the death of the animal some weeks afterwards from an accidental cause.

The author has been induced to give publicity to this successful experiment, because he considers that he has seen eyes which might probably have thus been restored to vision if the operation had been performed *immediately* after the receipt of the injury. The animal did not appear to suffer pain, except when any fluid came in contact with the eyelids.

THE FUNCTION OF THE SPLEEN.

To the Editor of the Medical Gazette.

SIR,

IN your journal of the 25th ult. is a letter, signed "A Contributor," which contains some strictures upon my Essay on the Nature and Causes of Epilepsy, &c. Your correspondent confines his remarks entirely to the physiology of the spleen, and denies *in toto* that it is subservient to the portal circulation, by affirming that "there is no ground whatever for believing it to be a vitally contractile organ." Now I am ready to admit, and I do admit, that there is considerable force in some of the objections of your contributor. His remarks

upon my explanation why loss of the spleen is not fatal, are upon the whole just: and I further admit, that if no better explanation could be given of the fact than the one I gave in my Essay, that this alone would be sufficient to destroy the "theory" which, as he observes, I am "endeavouring to establish." At the time I penned the observations which your contributor quotes, I suppose I must have been as blind as he sagely remarks authors very often are! But critics may be blind as well as authors; and my blindness is, or rather was, for I have long ceased to be blind upon that matter, of a different sort to that which I suspect your contributor is affected with. My blindness prevented my seeing that the spleen consisted essentially of the roots of a vein, the spleno-hepatic vein; and that the trunk and branches of that vein, as well as the roots, possess the property of vital contractility. Your contributor's blindness will not permit him to see, although it is obvious enough, that even the spleen possesses this property. The varying size of the spleen at different times proves it to be a vitally contractile organ; and Glisson's capsule proves that the trunk and branches of the spleno-hepatic vein also possess vital contractility. But these are proofs which your contributor's blindness may possibly prevent him from seeing. Fortunately, however, the vital contractility of the spleen admits of an easy and familiar illustration. Bécclard and others have remarked that there is a close resemblance between the spleen and the penis "in texture and phenomena." Your contributor says "there is not the slightest evidence of its (the spleen's) contractile power, *i. e.* more than that of elastic tissue in other parts," Peradventure, the penis is one of those "other parts;" and your contributor therefore, I presume, denies that it as well as the spleen possess the property of vital contractility. Both the penis and spleen are organs which vary greatly in size at different times. Sometimes they are distended with blood; and at others nearly empty: and if the variation in size of the spleen can be accounted for, as your contributor affirms, by "mere elasticity," then the variation in size of the penis can be accounted for in the same way. If the contraction of the distended spleen is

effected by mere elasticity, then the contraction of the distended penis is effected by mere elasticity: but if the contraction of the penis be produced by vital contractility, then I submit that the contraction of the spleen (which so closely resembles the penis in "texture and phenomena") is also produced by vital contractility. Now erection of the penis we know to consist in more blood being received from the pudic arteries in a given time than passes out of the organ by the pudic veins. Its contraction, we also know, consists in more blood passing out of the penis by the pudic veins than is propelled into it through the pudic arteries. I shall not ask your contributor to tell me on what property, or on the suspension of what property, erection of the penis depends; but I do ask him to tell me on what property its contraction depends? He has already answered, on "mere elasticity;" for he has said that contraction of the spleen depends on mere elasticity, and has alluded to "other parts"—one of which other parts is doubtless the penis. Here, then, your contributor and I are at issue. He affirms that the contraction of the penis is produced by mere elasticity; I, that it is owing to vital contractility. Now I think I can prove that it is *not* owing to mere elasticity, and that it is owing to vital contractility. My arguments are simply these. Elasticity is a physical property, and therefore cannot be influenced by a moral agent: but fear, which is a moral agent, causes the almost instantaneous contraction of the penis; *ergo*, its contraction is not owing to elasticity. But although fear cannot influence a merely physical property, there is no reason why it should not influence a vital one. Your contributor, however, might perhaps maintain that fear acts upon the penis, not by influencing its vital contractility—not by causing the venous plexuses of the corpus spongiosum and corpora cavernosa to contract, but by producing an altered action of the heart and arteries, so that less blood is supplied to the penis, and that elasticity still sends it out of the organ. But this explanation, or rather subterfuge, would not serve. The sudden application of cold produces the same effect as fear, or fright; and we can see that it causes the veins to

contract. When the veins of the hand are distended, and the hand is then plunged into very cold water, nay if even the tips of the fingers are dipped in it, we can see the contraction of the veins. Is this instantaneous contraction of the veins preceded by an altered action of the heart and arteries, or by any diminution of the *vis à tergo*? and is it produced by mere elasticity? or by vital contractility, inherent in the veins, which are living and not lifeless tubes? And why do the veins contract upon the application of cold? What is it for? Why, manifestly, to hasten the blood back for more oxygen!

Now will your contributor still deny the vital contractility of the veins, because "some of our first physiologists" say they are not contractile? and will he venture to repeat in your columns "that there is no ground whatever for believing the spleen to be a vitally contractile organ?"

It is quite amusing to see how he handles the facts which support the notion that the spleen is subservient to the circulation. In opposition to a remark of mine, that the spleen of a man is at least twice as large when compared with his liver, as the spleens of the generality of quadrupeds are as compared with their livers, owing to the direction of the portal vessels being vertical in the former, because of his erect attitude, and horizontal in the latter, because they go upon all-fours, your contributor, not daring to deny the fact, but wishing to weaken its force, (for he knows it is one of the arrows in my quiver), says—"our author finds a regular relative proportion between the spleen and the liver in man and other of the higher animals; he describes it in man as 6 to 1; and in quadrupeds as 12 or 16 to one: whereas, MM. Bichat and Cruveilhier say that the spleen "varies so much in size, that it is almost impossible to say what are its normal proportions!" Why did not your contributor show that the spleen is not much larger comparatively in man than in quadrupeds? Why, if he disliked the statement, did he not grapple with it, and test its truth, instead of sheltering himself behind a counter-statement of MM. Bichat and Cruveilhier? who, I dare affirm, never in their lives thought of ascertaining the relative size of the livers and spleens

of men and quadrupeds by weighing them.

I shall make no further comments upon your contributor's letter; and will conclude by explaining why loss of the spleen is not fatal, nor yet productive of any very serious immediate consequences. The spleen consists essentially, as well as chiefly, of the radicles of the spleno-hepatic vein, and the removal of the former does not interfere with the trunk and branches of the latter. When we extirpate the spleen we do not remove them, (the trunk and branches), nor do we deprive them of their vital contractility; and it is by this vital contractility of the trunk and branches of the spleno-hepatic vein that the portal blood is propelled through the portal plexuses and hepatic veins into the right auricle, after the spleen has been excised. The circulation of the blood comprises three distinct and perfect vascular systems—a portal, a pulmonary, and a general; and not, as Harvey taught, and as at present believed, only two—a pulmonic, and a systemic. The portal system is not a part or dependancy of the general system; and the left ventricle is no more capable of propelling the blood through the portal system, than the spleno-hepatic vein is capable of propelling it through the general system. There are obviously three vascular systems, as above stated: will your contributor oblige me with a reason why there should be only two propulsive agents, the two ventricles?

I am, sir,

Your obedient servant,

JOHN JACKSON.

London, Dec. 18, 1842.

P.S. I see your contributor concludes his letter by promising "to take another opportunity of attempting to show that the use of the placenta, and its "vital contractility," are considerably more questionable than our author supposes." To this "our author" can only say, that he pledges himself to reply to all your contributor may advance against the vital contractility of the placenta; and to all that either he or others can adduce against the notion, that the spleen is simply a permanent placenta, and the placenta only a temporary spleen.

MEDICAL GAZETTE.

Friday, January 6, 1843.

"Licet omnibus, licet etiam mihi, dignitatem
Artis Medicæ tueri; potestas modo veniendi in
 publicum sit, dicendi periculum non recuso."

CICERO.

THE CHRISTMAS RECESS.

AT the approaching termination of the Christmas recess, the inquiry very naturally suggests itself, how our students have employed the leisure which it has afforded them? An acute and experienced observer of character, could he obtain accurate answers to this question, would, no doubt, become possessed of data from which he might draw very fair conclusions as to the future success and happiness of his junior brethren. But his speculations, however interesting to himself, would be of no practical utility to the subjects of them, unless he could bring them to bear, in the form of personal application, to each of the individuals concerned. There are in every school a certain number who, even by the most lenient and charitable construction, must be classed as the idle and dissipated. Of these, such as have already wasted a large portion of the time allotted to them for study are, no doubt, beginning to feel the bitter consequences of their imprudence—to have misgivings about their approaching examination, and alarming calculations as to the amount of information which their diminished opportunities and exhausted strength will allow them to acquire during the period of painful labour which they have chosen to substitute for the cheerful and creditable exertions originally required of them, and which were once within their power. These mistaken young men have our sincere compassion, and our warmest wishes for their amendment. With respect to many, or nearly all, we would

hope it is not too late to redeem their character. A resolute avoidance of the scenes and the companions of their follies cannot fail of producing good results, and such a course we heartily recommend to them.

Those whose studies have hitherto been marked by diligence, have, we hope, turned to pleasurable and profitable account their time of rest and enjoyment, and are returning to their welcome pursuits with minds refreshed and cheered; and to them we heartily bid God speed! To the large number who belong decidedly to neither of these classes, but who fill up the intervening ranks by imperceptible gradations, some words of counsel may not be unacceptable—at all events, the occasion naturally suggests them.

To his teachers, of course, the principal evidence of a pupil's diligence and good conduct must always be his undeviating attendance at their respective lectures and hospital visits. A teacher cannot possibly think well of those whose persons are unknown to him, and can hardly approve those whose absence, though only occasional, is yet frequent enough to be remarked. But as we have made no scruple to avow a belief that the system of teaching now in general use is capable of great improvement, and as there are undoubtedly grave and valid objections to the very large number of lectures insisted on by the various licensing bodies, it may, perhaps, be pleaded that this constancy of attendance is but a fallacious test of merit.

This plea may be more or less valid on the second count, namely, as to possible improvements in the mode of teaching and of learning, but it is worth absolutely nothing on the first. As a test of merit, an evidence of steady diligent habits, and a prognostic of success, it is the least fallible of any—less so than most of the evidence on

which judgment is formed in the daily affairs of life. Not to enlarge on the want of moral discipline and proper modesty, which is implied in an indecent and flippant censure of established regulations by those whose duty it is to conform to them, it may, without fear of contradiction, be affirmed, that in no one instance has a diligent and really undeviating attendance on the prescribed courses, when persisted in during the whole period of study, been followed by rejection of the candidate at examination, or failure in the laudable objects of professional ambition. Some cases of physical, or even mental, incapacity undoubtedly have occurred (though the latter are rare indeed), which do but prove the rule to which they are exceptions. Although the qualities which generally predominate with great steadiness of character have the reputation of being seldom allied with great brilliancy of talent, yet the general result is so favourable, and so unvarying, that this course may safely be pointed out as unexceptionable. The first year's man, at least, has no sort of excuse for absenting himself. To him all is new; he can have no data from whence to conclude anything unprofitable.

“*εργα νεων, βουλαι τε μεσων, ευχαι τε γεροντων.*”

“Work for the young, counsel for the middle-aged, and prayers for the old,” is the natural law according to which duties, responsibilities, and rewards are allotted to the several stages of man's life; and those who defer the main business of either stage to the succeeding one, will have cause to regret their mistake. This is worth the serious attention of those well-meaning young men who, with temperaments of more mobility than force, expend their stock of intellectual strength—generally a very slender one, by the way—on planning Utopian improvements in the

mode of their studies. Some such young men are found yearly in every school of art and science. The tree of knowledge supplies the sort of exciting nourishment on which they thrive, and in medicine there has never been wanting an annual crop of these fungous intellects, doomed to the admiration of the superficial, and the compassion of the philosophical observer, who sees in their unhealthy germination the unfailing marks of rankness of growth, and early decay. Medicine seems calculated to suggest humility to the mature and vigorous—vanity to the youthful, and the feeble. We may therefore calculate with equal certainty, that in our art, neither vain babblers, nor judicious reformers will ever be wanting. Let our young men be quite sure of this, that in proportion as they assume the functions of reformers, while their judgment is immature, they will weaken their capacity to perform those functions with vigour, when maturity and experience shall have imposed on them the duties and the responsibilities of reformers.

At this season, we would strenuously urge upon all students a careful review of their conduct and their progress during that portion of the present session which has already passed away. A first year's man, a fresh man, should especially inquire how much of solid foundation he has laid for future acquirements. Has he omitted any lectures, and why? Has he neglected to *reconsider* or *write out* such notes as he may have taken, or to read the several works recommended to him as text books? Has he made any acquaintances, or adopted any habits, prejudicial to his industry or his character? If so, let him at once abandon them—the task will never again be so easy. If he have reason to trace any fault of this kind to his being left too much to his own discretion, lodging alone, or

with an ill-chosen companion, let him at once make every endeavour to amend his position, by getting into a family where direct or indirect control will be exerted over his habits, and where the hours are so arranged as to suit the engagements and the wants of a student. Has he regularly attended the examinations of the class, and what has been his success in answering questions? This is most important. He will by this time have discovered in what subject he excels, and will know for which of the prizes he ought to compete. There is no good reason why every man should not try for honours, in one branch at least. The custom of tamely yielding up all competition to one or two men whose proficiency has become apparent early in the season, is very prejudicial, and exceedingly foolish. The value of the prizes is materially diminished by the absence of competition.

The various lecturers have much reason to lament, that even those pupils who are most ready in answering questions upon the lecture of the preceding few days, seem to occasionally retain but a small portion of the information which has been conveyed in earlier lectures; and this shews the small degree in which any exertion on the part of his teachers can supply to such student that thorough grounding and progressive improvement—that complete mastery of first principles, which is essential to the gradual and complete acquirement of our art.

The last three months should not have passed over the head of any fresh man, without his having acquired a very considerable knowledge of anatomy—enabling him to demonstrate the bones, and enumerate the muscles attached to them, the form and situation of the viscera, &c. In chemistry he should be quite abreast of the lecturer, as far as he has yet gone, being able to describe nearly all the experi-

ments hitherto performed, and give an account of their rationale; the more simple experiments with re-agents he should himself have performed. He should know in *materia medica* the sensible qualities, and general classification of the substances that have been described, and, above all, he should have written out and reduced to the form of diagrams all the decompositions he has heard treated of, using in all cases, at whatever cost of time and trouble, the symbols expressing the component parts of bodies. An early mastering of this difficulty will give him an accurate and an enduring knowledge of the composition and the properties of bodies; he will learn never to think of a compound independently of its exact composition. It is moreover an immense assistance in taking notes, and gives the mind a habit of exactness and of patiently working out the different steps of problems, such as is acquired by the diligent study of the classics and mathematics—advantages of which most medical pupils are deprived far too early, and the want of which is often felt severely in after life.

There is now before us a little work* by the late Dr. Fletcher, of Edinburgh, consisting of letters written by himself to various friends and relations. After passing his examinations, he reflected that in practice he should be likely to lose all the Latin he had acquired, except just enough to write a prescription: he began a correspondence in that language with a friend: this, however soon flagged, and he then collected the letters which form this volume, and translated them into Latin. The letters are full of wit and brilliancy, the latinity is excellent, and the book printed in an ancient fashion, looking like a volume of the 16th century: it is altogether the elegant amusement of a scholar and a gentleman. Those who knew

* *Laurentii Epistola*, &c. See also *Moræ Sub.* by the same author: both works are very scarce

Dr. Fletcher will remember the powerful originality of his mind, and the quantity of laborious work he performed in his short life, and will be of opinion that the spending a little time in keeping up an acquaintance with the classics will not be detrimental to more important pursuits.

ON THE
DIVISION OF MEDICAL LABOUR.

BY ROBERT HULL, M.D.

(For the London Medical Gazette.)

The Hospital Surgeon.

THE harmony of our profession is endangered by false or foolish friends. Injury and ruin overhang the English practitioners, unless they awake from their torpor, and suspect that their advisers may be seeking only selfish ends; that "all is not gold that glisters." If the credulous recipients of novel theories would imagine a therapeutic Utopia, they could not improve upon our present arrangement. Like the British constitution, it has resulted from the wants of man and a natural adaptation. It is not a paper concoction, a code-formed speculative affair; it has been built by the solidifying experience of ages.

Let the practisers of our art soberly ask *themselves*, what it is they want; not endure that their necessities should be tenderly explained to them by others. What seeks the *physician*? No alteration. He is not the reformer. What covets the *surgeon*? Nothing, in his dignified and manly department, save freedom from the calumny of modern and non-anatomical foes. What wishes the *simple apothecary*? The humble career of an useful course. Whom, then, has the incendiary found to be susceptible? *The general practitioner*. He it is who has lent an unsuspecting ear. Conscious of a respectable and influential position, he fancies that his merits, which are real and allowed, are undervalued, underpaid, underfamed.

He is a surgeon, and he chafes because greater honour and bigger fees, paid to the *pure* chirurgion, should not

likewise adorn and enrich himself. He is an apothecary, a practiser in physic; educated, skilful, well-informed; and he grudges to the *pure* physician a superior eminence and *ready* money. He is a midwife, and he repines at toiling like a minor all the year around, getting not more than one accouchement occasionally fetches to the pure and London obstetrix. Hence he has been tinder for the seditious incendiary, and he has caught fire. He has wished to abolish the title of doctor altogether, or wear it himself. He has coveted fees for attendance rather than bills for medicines, and he has hailed every irregularity which may conduce to a professional chaos.

One of his gravamina is the paucity of surgeons for public hospitals. A great town supports one such institution, which is officered by four surgeons; but it maintains, perchance, twenty other professionals, all members of the College of Surgeons, all panting to flesh their knives. Thus they grumble because the surgery of the district is monopolized by the hospital men. Thus they lend a patulous ear to the demagogue, who tells them that the hospital is a barrier to professional merit, rather than a receptacle of helpless maladies. Thus, even in London, had the incendiaries effected actual arson, the pure chirurgions would have been burnt out; and general practitioners would have occupied their office.

Thus, they have aimed at a rotation of performers; Mr. Cooper to "take in" one week, Mr. Piggin the next; Mr. Grundy this Saturday, Sir Charles Bell, the subsequent.

All this is specious; but certain postulates are conceded. The postulate of fitness. It *seems* hard that Messieurs Addle, Birt, Crump, all members of the College, should lead a secondary existence, while Messieurs Hawkins, Liston, Luke, have secured official positions and proportionate private emolument. But the rotation plan would deteriorate chirurgery, rather than benefit the public. Hospitals are *schools* even for adult and senescent practitioners. The greatest surgeons are ever learners; and Cheselden, Pott, Cline, were what they were, because they continued in service, unejected by the pitiful rivals of their day.

Great care, doubtless, should be taken to elect an efficient, a master surgeon; but the man, once chosen, should never be rotatory. The hospital surgeon is incorporated into a substantial iatric body. Individual feebleness is lost in the assistance, co-operation, and humanity of colleagues—humane in proportion to their skill. I remember the entire life of a surgeon to a country hospital—from accession to office, until his spirit burst the *bonds* of office and of life—who was, if unsupported, utterly inadequate to chirurgic emergencies. But he executed the operations of twenty years, with as little homicide as most incisors, simply because he was helped, backed, cheered, by generous and philanthropic colleagues.

Now, doubtless, the hospital required a more independent performer; but this biography proves that for which alone I have adduced it, that the present system of permanent surgeons is not so lamentable as the rotators depict; that it *works* well, on the whole. The clever surgeons, touched with the feelings of a corps towards a lumpish brother—jealous of the fame of their common institution—above all, alive to human suffering—extricate their Bæotian brother from his difficulties; his patient from death. But, if the rotatory movement were effected, the movements of time and exclusiveness would never be formed towards moving officers. These tread-wheel gentlemen would not have opportunity to *learn*, so quick their expiration of office; whilst, during the roundabout week of duty, the incapables might not muster among them a master mind. Superfluous numbers, moreover, engender indifference and a sentiment of irresponsibility, and, after all, the rotatory plan *has* been tried and signally failed.

Vulgar selfish hatred of the present hospital system, has, occasionally, proceeded so far, that individuals have set up hospitals of their own. They have hired houses, where they operate, solitary, without check, without professional critics, without previous consultations, without any safeguard for the public. Or they have made dispensaries of their own domiciles. Thus the public are treated like inferior animals. They are decoyed into the Den of Cacus; and Cacus alone can tell their destiny. Thus established charities are swindled

of their lawful applicants; and medical pupils deprived of concentrated, accessible studies.

Against such irregularities time was, when the dignity of a public hospital staff presented a barrier insurmountable. Time was, when this staff was valued as a court of professional honor; giving a tone to the county; jealous of invasion; inexorable towards marauders. But this confidence in the magnanimity of hospital Dons is now occasionally a mistake. I have seen the lofty principle, like Jonah, thrown overboard, through selfish fears for individual safety. What has thus counteracted the ennobling tendency of surgery?

To those gentlemen, whom destiny has placed in public hospitals, I would say—"Whatever your feelings of personal interest, you have *duties* to perform towards the profession; towards your less lucky brethren; towards the ignorant public itself. If you believe that the division of labour, according to which yourselves have been carried into office, is true to science, productive of good to suffering humanity, demanding permanence, and your own weighty sanction, you will deserve all that contempt, which is sure to be bestowed, if you abandon principle and cater only for *self*. You are bound to set a conservative example to your urban brothers; to the country practisers; but, above all, you are to direct the public for their own good, and in spite of their essential ignorance of medical matters. And, if you reject confraternity with bare-faced empirics, you are also bound to withhold alliance from every infringer of admirable arrangements.

————— καὶ γὰρ ἐσθλὸν οὐ συμμίσγνται."

If we receive our ideas about divided labour from grasping and puffed-up persons, the distinction of offices would be needless. Surgeons would assume to themselves every case, *if* "surgery includes all diseases which require operations, external applications, or any kind of manual treatment." According to this precious paragraph, the surgeon will manage every affliction, from the mind to the mesentery; since there is no disorder, but it may require external ministration.

However, hospital surgeons, unconvinced to this monopolising creed, have

been hitherto illustrants of divided labour. Yet there are some disorders, which, because in private practice they are treated in common, by physicians and operators, form a basis of dissension in the public institute. But a spirit of fairness would easily put a stop to this.

Disputed disorders might be disposed of, through reference to the common sense of the subject; or to the practice at other hospitals; or to a mutual and equal management.

Common sense dictates what must not be claimed by the physician. No hand work. No mechanical apparatus.

There are, however, many medical cases, which require the aid of *minor* surgery. Thus fevers, internal phlegmasiæ, morbid actions within, may demand the lancet, the scarifier, the seton, the caustic, as adjuvants. These are "medical" cases.

The real question is, whether, in any case, surgical or medical treatment predominates, local or constitutional. The predominant methodus medendi would determine who should be the medens. Thus, spinal affections dependent on the bony apparatus or superjacent ligaments and muscles, are rightly handed over to the surgeon. Maladies in the contained medulla, or the cerebrum, are strictly "medical." But in many instances, the disease is *common* ground, as the disorders of the senses, of the eyes, of the ears.

These diseases, which are discussed in the established works on surgery; and also in the dictionaries of physic; are common to both branches of medicine. Thus lues, in the primary and local forms, seems to have been exclusively claimed by the surgeon. The *constitutional*, as the term implies, is "medical," or, at the most, common ground.

But if the benefit of the patient, rather than the repute of the practiser, were the simple motive to contention, this would seldom exist, and to every hospital surgeon and physician might be applied the eulogium—

—ἔχει τι σχῆμα
ἀνὴρ ὁ χρηστός δυστυχούντας ὠφελῶν.

PORTUGUESE PRACTICE.

CASE I.—*Ascites complicated with anasarca and tympanitis. By Sgr. J. M. Alvaro.*

A woman, aged 41, had suffered from violent hæmorrhage in consequence of the placenta being attached to the os uteri, and after another accouchement she laboured under the complication of diseases above mentioned. In four months she was cured, chiefly by the endermic application of squill and digitalis, compresses to the abdomen, blisters to the thighs, dry frictions, rubbing in of volatile camphor liniment, and ligature of the leg. At the end of the history, the author makes the just observation, that the remedies proved so effectual in this case, because the dropsy was purely asthenic, and not caused by the abuse of spirituous liquors, or by organic disease. Paracentesis was not performed, because it is but a palliative, and it was better to try, previously, every other remedy against dropsy.

CASE II.—*Twin-birth, accompanied by convulsions. By Sgr. D. B. S. Cadet.*

On the 24th of February, 1838, a baker's servant-maid, aged 38, well formed, was seized with the pains of her first labour, accompanied by convulsions. On the following morning she was delivered of a living girl, but without the placenta. In spite of repeated bleedings, sinapisms, and blisters, to the nucha and the arms, she remained in the same spasmodic and unconscious condition, and on the morning of the 26th was delivered of a second girl (who was dead,) and also of the placenta. The author first saw the patient two hours after the second birth, when she was still in an apoplectic state. The cervix uteri was open only far enough to allow the introduction of one finger, an operation which produced pain and spasms. The hypogastric region was hard, and through it could be felt the uterus, of the size which it is in the fifth month of pregnancy. The rest of the abdomen was relaxed, but the hæmorrhage was small. The prescriptions were, twenty-four leeches to the abdomen, emollient poultices, injections into the vagina, another copious venesection, sinapisms to the lower extremities, and a common clyster. At 9 o'clock, the patient could answer a few questions, though with difficulty; the cervix uteri was in the same state, and the uterus was somewhat lower. Another bleeding was ordered, and some broth. The patient's condition continued to improve, and on the 29th, at 10 in the evening, the placenta came away while the patient was making water, after which her condition, both general and local,

improved so much, that she merely presented the phenomena of a newly-delivered woman. The reporter observes, in conclusion, that he took the violent constriction of the os uteri to be the cause of the retention of the placenta, and employed strong antiphlogistics, with the intention, if they did not succeed, of removing the after-birth by artificial enlargement of the os uteri. The reviving activity of nature fortunately saved him from this necessity. [The German translator doubts whether this happy event occurred by means of, or in spite of, the large and repeated bleedings.]

3.—*Cases in the Regimental Hospitals of St. Francisco da Cidade. By Jos. Mar. Pereira e Sousa. Serous Vesicular Swelling of the Liver, which, from its size, and the accompanying symptoms, resembled Ascites.*

A foot soldier, aged 40, who had just gone through six years' confinement in a fortress, entered the hospital in 1826, on account of what appeared to be dropsy. Besides the unusual size of the body, and tangible fluctuation, he suffered from the bad and well-known symptoms of ascites. The patient could allege no cause for his disease, which was of long standing, but had not inconvenienced him at work. Anasarca had come on during the last few months only. A swelling of the liver, which, however was not easy to recognise, and constant pain in the hepatic region, induced the belief that there had been hepatitis originally; and the patient was accordingly treated with general and local antiphlogistic remedies, internal and external revulsives, &c. This treatment having been continued for some weeks without advantage, it was intended to perform paracentesis, but this was prevented by the rapid sinking and death of the patient.

The section displayed an enormous cystic tumor, which hung down from the right anterior edge of the liver, and was covered and circumscribed by the peritoneum. It contained from twenty-eight to thirty pounds of dark-yellow serum, with many albuminous flakes. The liver was pale, firm, and above the normal size. The gall-bladder contained a quantity of thick, tough, and dark-green bile. The mucous membrane of the stomach was variegated with red points in patches. There was no other disease either in the abdomen or thorax. It is said, in the observations which follow, that hepatic diseases, which are so various in their kinds, are very common in Portugal, and that their study and treatment ought, consequently, to be much farther advanced than they are.

The cystic tumor, in this instance, is remarkable for its enormous size. A similar case, described by Hesse, is to be found in *Horn's Archiv.* for September and October,

1829; in Pinel, *Med. Clin.* p. 126; and in his *Nosogr. Philosoph.* tom. iii. p. 531, there is a case by Lassus.—*Zeitschrift für die gesammte Medicin*, from the *Journal da Sociedade das Sciencias Medicas de Lisboa.*

[To be continued.]

LIGATURE OF THE PRIMITIVE ILIAC ARTERY.

THE primitive iliac artery has been lately tied with entire success, at the Pennsylvania Hospital, by Dr. Edward Peace. We are enabled to present our readers with the following particulars of the case.

Israel Jones, a labourer, was admitted into the surgical wards of the Pennsylvania Hospital on the 22d of August, 1842, for an inguinal aneurism of five months' standing. Five months previous to his entrance, he strained his right groin, while lifting a heavy stone. A few days subsequently, a hard tumor, about the size of a pea, made its appearance, which became as large as a walnut in the course of a month, and continued to increase until the end of the fourth month, when it attained its maximum growth. There was pulsation about the third or fourth week. About the beginning of the fourth month numbness and pain commenced in the tumor, and extended along the anterior portion of the thigh. The latter symptoms were always aggravated by exercise, and abated by rest. The man continued his daily occupations until three weeks previous to his entering the hospital, when his sufferings became so great as to oblige him to desist. The pain at this period was so acute as to deprive him of sleep, and obliged him to maintain, night and day, a sitting posture, with his leg flexed on the thigh, and this on the pelvis; the whole limb resting on its exterior aspect. The tumor was large and irregular, hemispheroidal, and was, at least, two inches in height, its vertical diameter five and a half inches, and the transverse diameter about the same. It appeared to involve nearly all the right external iliac, together with some two inches of the femoral artery of the right side.

The man was an excellent subject, in the prime of life, robust, temperate, and uniformly healthy.

The operation was performed on the morning of the 29th of August, by Dr. E. Peace, assisted by his colleagues, Drs. Randolph and Norris, and Dr. J. Rhea Barton, and occupied forty-seven minutes.

The vessel was taken up about half an inch above the bifurcation, the ligature being passed around it very readily by means of Gibson's needle. Pulsation and pain ceased in the tumor the moment it was tied.

Numbness of the limb and foot, and insensibility, particularly of the toes, supervened immediately. Numbness continued to some degree, with occasional intervals, throughout the first two weeks. Sensibility gradually increased until the third day, when it was entirely restored, even in the toes. The limb below the knee became sensibly cold within an hour after the operation. It was immediately enveloped in carded wool, and recovered its natural temperature, as far down as the ankle, within the first twelve hours. At the end of twenty-four hours warmth had returned in the foot—the toes only remaining below the proper standard of heat. As the heat returned in the limb it augmented, so as to make it really warmer than the sound one, which continued to be the case during the first two weeks.

The capillary circulation in the toes continued sluggish until the sixth day, when it appeared to be entirely restored to activity. The man experienced slight pain, with the numbness, from time to time in the affected limb, but did not suffer materially until about the middle of the second week. At this time he complained of severe pain, beginning at the toes and darting up into the tumor. This pain was relieved by the application to the tumor of lint wet with laudanum. The tumor, which had previously been rather soft, at this time became much more dense, and decidedly smaller.

No other symptom worthy of especial note presented itself, except some tumefaction of the leg, which occurred on the fifteenth day, and subsided in two days.

The wound was dressed on the fourth day, and every day thereafter. The discharge was always healthy, and very moderate. The man's appetite excellent, and general health improved. One half of the wound united by the first intention; and the whole wound, except the sinus occupied by the ligature, had cicatrised within the first two weeks.

The ligature came away on September 27th, the *thirty-fifth day*. The patient is now allowed to sit up, and is doing extremely well.

The man experienced great relief from the numbness and pain, in repeated friction of the whole limb (and especially the foot, which suffered the most in this way) with soap liniment.

This, we believe, is the ninth time the primitive iliac artery has been tied. It was first tied in 1812, by Professor Gibson, of Pennsylvania, for a gun-shot wound. The patient died from peritoneal inflammation on the thirteenth day. 2. By Professor Mott, in 1827. The ligature came away on the eighteenth day, and the patient recovered. 3. By Sir Philip Crampton, in 1828.

Death on the fourth day from hæmorrhage. 4. By Mr. Liston, in 1829, for secondary hæmorrhage after amputation. The patient, who was eight years old, died. 5. It was tied in 1833, by Mr. Guthrie, for supposed gluteal aneurism. The operation was successful. The patient died eight months subsequently, and the disease proved to be a medullary tumor. 6. In 1837, Mr. Salmon, of St. Petersburg, tied the primitive iliac with success. 7. Mr. Syme, of Edinburgh, performed this operation in 1838. The patient died on the fourth day. 8. By M. Deguise, at the hospital of Charenton, Paris, in 1840. Successful.—*Philadelphia Medical Examiner*.

ON OPIANIC ACID,

A NEW ORGANIC BODY OBTAINED FROM NARCOTINE.

THIS body, which is remarkable on account of the manner in which it is formed, results from narcotine being exposed, under certain circumstances, to the effects of oxidation. It is best obtained in the following manner:—Narcotine is dissolved in dilute sulphuric acid, and it should be observed, that this latter may be present in considerable excess; to this solution manganese is added, being finely triturated, and then heated. The solution soon begins to assume a saffron-yellow colour, and evolves carbonic acid gas. The temperature is increased to the boiling point, and continued until no further carbonic acid gas is evolved. It should be ascertained that the manganese, as also the sulphuric acid, are present in excess at the termination of the process. The solution being still at a boiling temperature, is passed through a filter. Whilst cooling the liquor solidifies, forming a mass of fine crystalline needles. These consist of opianic acid. The mass is placed on a filter, where the yellow-coloured liquor is allowed to drip off the crystals, which are then repeatedly washed with cold water, and finally pressed as strongly as possible; after which the acid is purified by means of good animal charcoal, and repeatedly re-crystallizing from a saturated solution in boiling water.

Opianic acid crystallizes in very fine prisms of a silky lustre. It dissolves scarcely at all in cold water, but more freely in hot water; thus a saturated solution, at the boiling point, almost entirely solidifies on cooling, resembling benzoic acid. It likewise dissolves in spirit of wine. It has an acid reaction, possessing, however, only a feebly acidulous bitter taste. It fuses easily into a clear oil, and solidifies into a crystalline form, but remains amorphous if heated beyond its point of fusion. It does not seem to be

volatile, although it may be carried over by distillation ; this may, however, be explained by the circumstance that it rises on the sides of the vessel. Heated in the open air, it gives out an aromatic odour resembling that of narcotine. It is likewise very inflammable, and burns with a bright sooty flame.

Opianic acid disengages carbonic acid, and forms soluble salts with all bases. The salts of oxide of silver and lead crystallize in thin bright prisms and laminae.

It does not contain any azote. The writers will, on a future occasion, treat in detail of its formation from narcotine, and its remarkable behaviour towards ammonia. —*Annals of Chymistry*.

AN INFANT POISONED BY CHERRY LAUREL WATER.

By MM. RENE and WALHIER.

A FEMALE infant about eight months old, of a very good constitution, and who had experienced but little illness, seemed to suffer from dentition, and to have some intestinal disorder. The physician who was called in prescribed evacuants. The next day, finding irritation in the abdomen, he ordered three leeches to be applied, and prescribed the following potion :—

Black cherry water . .	120 grammes.
Syrup of Tolu	30 „
Myrtle and Calomel* . .	1 „
Laudanum	3 „

Mix. A [tea]spoonful to be given every hour.

The prescription was carried to a druggist who was not at home, neither was his first pupil. The second pupil, not immediately finding the bottle which contained black cherry water, thought he might use cherry-laurel water instead.

The infant had hardly taken half a teaspoonful of the potion, when she shrieked, threw her head back, was convulsed, and died in a few seconds.

The word “poisoning” having been uttered, the authorities ordered the body to be examined, which was done with the following results.

Inspection 24 hours after death.—The stiffness of death still remained ; the abdomen was rather hard, and slightly swelled.

In the brain and spinal marrow there was nothing worth mentioning. The stomach contained two teaspoonfuls of a yellowish

fluid without smell ; and its mucous membrane was injected towards the greater curvature. The rest of the alimentary canal was healthy. The fluid contained in the stomach, though carefully examined, showed no trace of prussic acid ; but the fluid in the phial contained a large quantity. This was shown not only by experiments on rabbits and a dog, which after swallowing a teaspoonful, died with convulsions in two minutes, but by chemical experiments which demonstrate the presence of a greater quantity of prussic acid than is usually contained in cherry-laurel water made under the most favourable circumstances. From these facts and some others contained in the annals of science, the authors justly conclude that it would be well to discontinue the use of the distilled water of the cherry-laurel (whether filtered or not filtered), until the mode of its preparation be more accurately fixed, and its action on the system more precisely ascertained.—*Gazette Médicale*, December 3, 1842.

FLOWERS WHICH PERFUME THE AIR.

AND because the breath of flowers is far sweeter in the air (where it comes and goes, like the warbling of music) than in the hand, therefore nothing is more fit for that delight than to know what be the flowers and plants that do best perfume the air. Roses, damask and red, are fast flowers of their smells ; so that you may walk by a whole row of them and find nothing of their sweetness ; yea, though it be in a morning's dew. Bays, likewise, yield no smell as they grow, rosemary little, nor sweet marjoram ; that which, above all others, yields the sweetest smell in the air is the violet ; especially the white double violet, which comes twice a year, about the middle of April, and about Bartholomew-tide. Next to that is the musk-rose ; then the strawberry leaves dying, with a most excellent cordial smell ; then the flower of the vines, it is a little dust, like the dust of a bent* which grows upon the cluster in the first coming forth ; then sweet-briar, then wall-flowers, which are very delightful to be set under a parlour or lower chamber-window ; then pinks and gilliflowers, especially the matted pink and clove gilliflowers ; then, the flowers of the lime-tree, then the honeysuckles, so they be somewhat afar off. Of bean-flowers I speak not, because they are field-flowers : but those which perfume the air most delightfully, not passed by as the rest, but

* As calomel is insoluble, this is probably a typographical error ; unless, indeed, it was intended to be diffused by means of the syrup. The leaves and flowers of the myrtle are in the materia medica of the French codex.

Translator's Note.

* *Bent*, a stalk of grass.

being trodden upon and crushed, are three, that is burnet, wild thyme, and water-mints ; therefore, you are to set whole alleys of them to have the pleasure when you walk or tread.
—*Bacon.*

SUDDEN DEATHS AT STRASBURGH.

At the late scientific meeting at Strasburgh, M. G. Tourdes communicated a statistical notice on the sudden deaths in that town. The causes of death, as ascertained in twenty-six cases, by *post-mortem* examination, were as follows :—

	No. of Cases.
Apoplexy (cerebral hæmorrhage)	1
Serous apoplexy	1
Cerebral congestion	4
Cerebral and pulmonary congestion	1
Hemoptysis	1
Foreign bodies in the bronchi	2
Pulmonary congestion	13
Syncope	1
Perforation of the intestines	2
	<hr/> 26

1. In more than half the cases, death occurred while digestion was going on, and the stomach contained a considerable quantity of food, recently swallowed.

2. The blood was fluid, or mixed with diffiluent clots in two-thirds of the cases ; it was always so in the instances of pulmonary congestion, with one exception.

3. In two-thirds of the cases there was organic disease of the heart. It consisted in concentric, or more frequently eccentric hypertrophy, with dilatation of the cavities ; there was never any narrowing of the orifices. These alterations favoured the development of the affections of the lungs and brain.

4. Sudden death occurred more frequently among men than women ; and among the latter at a more advanced age. Cases were most numerous in summer and winter, particularly the latter.

M. Mayor, of Lausanne, cited three instances of sudden death through syncope from slight or unknown causes. No diseased structure was found on examination.

M. Bertini saw a young man die suddenly from syncope, at the moment the surgeon was introducing a sound into his urethra.—Abridged from the *Examineur Médical*, and *Gazette Médicale de Strasburg*.

DISTILLED WATERS.

DISTILLED waters are prepared in the following way by Tassing :—

A tin still is placed in the boiler, provided with a second and perforated false bottom, 1" situate above the former. The space above the false bottom is filled with the substance to be extricated. The steam enters the interstice between the bottoms from the boiler, through a tin tube, and carries in its passage through the herb, &c. all the volatile elements. Bottles, capable of containing twenty ounces, are completely filled with the water, by repeatedly placing them on the steam apparatus so as to expel the air, and then, whilst still hot, and without applying a cork, they should be covered with a string to the neck of the bottle, and coated with sealing-wax. They are kept in cool and dark cupboards. The bottles in use are closed with a cork, and placed in tin boxes. Distilled water of fruits, prepared as aqua duplex or triplex, keep especially well in this manner.

Müller is of opinion,—not so the late Brandes,—that the circumstances of distilled waters seldom keeping well for any space of time, is to be ascribed mainly to the impurity of the spring-water ; and, to assist in their preservation, first of all the water employed should be as pure as possible, and also free from carbonic acid. He employs pure river, or rain water, or melted snow, adding at the same time, during distillation, to each pound of distilled water, half an ounce of pulverised charcoal. He thinks he has observed, that the essential oil thereby unites in greater quantity and more intimately with the water, and that the product keeps better. In order to obtain waters which keep well, such vegetable substances only as are fresh and good should be used : the waters must not then be immediately brought into the preserving vessels, neither should the essential oil, floating on the surface, be removed ; and, when poured out, they should always be well agitated, and kept in stone bottles in an airy, dry, and cool place.—*Annals of Chymistry*, December.

CERTIFICATES OF LUNACY.

I WILL venture to say that not one practitioner out of one hundred ever had a case of insanity under his care, or made the diseases of the mind his study, and yet a certificate, with the names of any two physicians, surgeons, or apothecaries, attached to it, is sufficient to warrant any two or three keepers forcibly dragging a person in the perfect possession of his senses to some snug retreat. How many who are merely labouring under temporary mental excitement, not the most remotely allied to insanity, are considered as mad, and are shut up in lunatic

asylums ! The man whose habits are merely eccentric, whose passions are easily roused, is often pronounced insane, and is doomed to pine away his existence among men unquestionably mad. It is an easy and effectual mode of getting rid of a troublesome relative to send him to an "establishment for the reception of the nervously afflicted," as a madhouse is often termed in an attractive advertisement. It may be said, that this never happens. I reply, it has occurred, and as long as the present "certificate system" is put in practice, the same outrage on humanity will often take place. The utmost vigilance and kindness exhibited by the Commissioners appointed by the Lord Chancellor to visit the receptacles for the insane will not remedy the evil. It is impossible that every case can be investigated.—*On the Preservation of the Health of Body and Mind.* By Forbes Winslow.

SULPHATE OF QUININE.

ACCORDING to a Parisian Journal, (the *Examineur Medical* of Dec. 15th), serious symptoms, and even death itself, had lately followed the administration of large doses of sulphate of quinine in the hospitals.

HOMŒOPATHY.

To the Editor of the Medical Gazette.

SIR,

I CANNOT resist calling your attention, as well as that of our profession generally, to a melancholy and fatal instance of the fallacy of homœopathy, which has lately occurred in the upper circles. I send you the particulars, not only because they are of painful interest, but because I think the circulation of them may do more to check this fashionable quackery than all the arguments which so *learned a science* has had arrayed against it. It is surely too profound for the wise to comprehend, and can only be understood by those who allow their credulity very far to exceed their judgment. This affectation of depth makes the system more dangerous than a mere vulgar empiricism.

Unfortunately for herself, the poor lady to whose fate I allude, had great faith in the doctrine of homœopathy. Her husband, too, was equally credulous as to the efficacy of the German theories of Hahnemann. Though in her confinement, eighteen months ago, she nearly lost her life by homœopathic treatment, her belief in it, strange to say, continued unshaken ; and on again becoming pregnant, recourse was had, as before, to the disciples of the infinitesimal system. This lady was of a very plethoric habit, and,

according to the accepted practice in similar cases, should have been carefully watched by her medical attendant during the whole period of gestation, and such means adopted as were likely to prevent any undue determination to the head during or preceding labour. Thus might have been prevented the probability of apoplexy or convulsions. But such treatment is against the principles of Hahnemann and his disciples ; and therefore could not have been followed by the homœopathic attendants on this unhappy lady. As the period of her expected confinement drew near, she was seized with convulsions ; and, as a matter of course, their fractional grains and their globules had no sort of power to check them. Some time was lost in these fruitless attempts—and we all know the great value of even an hour in such cases. By accident, a medical man of some eminence was in the house, and was requested to see the case ; he pronounced the lady to be suffering under puerperal convulsions, requiring from those in attendance the most active and energetic measures, and the assistance also of a skilful accoucheur, to forward the delivery of the patient, which seemed to him urgent and necessary. No, the homœopathic doctors spoke confidently, and the poor husband was not shaken in his faith of their skill and power. The infinitesimal remedies were alone used : the convulsions, as a matter of certainty, ran their course unchecked ; and apoplectic coma followed !

Here I pause ; not to comment on the foregoing part of the narrative, but to introduce a copy of a bulletin these worthy gentlemen issued when the patient was in this stage of the disease, and when she was, in all likelihood, past hope—when effusion must have commenced, and when no bleeding, no leeching, no purgative had been used but as you will see, "the violent convulsive attacks *had* yielded to the means employed."

(COPY.)

"Lady — had till nine o'clock last evening several very violent convulsive attacks. These have now yielded to the means employed, and there has been no return since two o'clock this morning."

"Her Ladyship has, however, not yet recovered her senses."

(Signed), "P. CURIE L.C.

"HARRIS DUNSFORD, M.D.

Friday, $\frac{1}{2}$ past 9, A.M.*"

* There is a strange contradiction in this charming bulletin :—"Lady —, had several very violent convulsive attacks till 9 o'clock last evening, and there has been no attack since 2 o'clock this morning." Do they mean that they gave their globule at 9, and at 2 she had her last convulsion ?

A note was written by one of the family at this juncture, speaking cheerfully of the opinions given by these gentlemen, as manifested in their bulletin.

In this state of unconsciousness, and by the assistance, I understand, of the medical practitioner before alluded to, the patient gave birth to a child and sank. These are facts; and the story is a melancholy one, much to be deplored. Although painful to all parties interested, it ought not to pass by unnoticed. I am sure you will say with me, that any tyro, who had attended one course only of midwifery lectures, would have known every symptom in this case, and been able to determine on the necessary, and (in all probability) successful treatment. A story was circulated immediately after the event, that a fright occasioned the convulsions: this caused a fear of the coroner. The rumour was then changed, and a post-mortem examination was made.

Report.—Softening of the brain; a large tumor; and more water than usual in the ventricles.

Your readers may wish to know who examined the head? Dr. Hahnemann's disciples!

These facts need no further comment; they must be clearly understood, at least by every medical man.—I am, sir,

Your obedient servant.

M.D.

January 3, 1843.

NOTE FROM MR. DALRYMPLE.

To the Editor of the Medical Gazette.

SIR,

I HAVE only this day seen the observations of Mr. Clay Wallace, respecting a certain muscle in the eyes of fishes, contained in your journal of the 16th inst., and I lose no time in offering to that gentleman my apologies for the use of a term which could not but have been offensive to him. After his disclaimer, I cannot but regret having "suspected" him of a plagiary of what was after all by no means worth the copying.

I am sir,

Your obedient servant,

JOHN DALRYMPLE.

6, Holles Street, Cavendish Square.
Dec. 29, 1842.

ROYAL COLLEGE OF SURGEONS.

LIST OF GENTLEMEN ADMITTED MEMBERS.

Friday, December 30, 1842.

J. S. Mackintosh.—G. Geere.—T. Evans.—
T. S. Blackwell.—H. Hutson.—W. A. Rackham.
—C. Evans.—W. S. Britton.—H. Cooper.—R.
Jones.—J. Mullins.—N. Buckley.

DECEASE OF MR. WALKER.

WE regret to announce the death of Mr. Walker, one of the surgeons of St. George's Hospital. This event took place on Monday last, after a very short illness; and we understand that the immediate cause was hæmorrhage from the intestinal canal dependent upon disease of the liver.

A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, December 24, 1842.

Small Pox	9
Measles	32
Scarlatina	33
Hooping Cough	31
Croup	7
Thrush	3
Diarrhœa	6
Dysentery	2
Cholera	0
Influenza	0
Typhus	29
Erysipelas	6
Syphilis	0
Hydrophobia	0
Diseases of the Brain, Nerves, and Senses ..	141
Diseases of the Lungs and other Organs of Respiration	242
Diseases of the Heart and Blood-vessels	19
Diseases of the Stomach, Liver, and other Organs of Digestion	52
Diseases of the Kidneys, &c.....	10
Childbed	7
Ovarian Dropsy	0
Disease of Uterus, &c.	3
Rheumatism	8
Diseases of Joints, &c.	2
Ulcer	0
Fistula	0
Diseases of Skin, &c.	0
Diseases of Uncertain Seat	100
Old Age or Natural Decay	70
Deaths by Violence, Privation, or Intemperance	18
Causes not specified	3
Deaths from all Causes	833

METEOROLOGICAL JOURNAL.

*Kept at EDMONTON, Latitude 51° 37' 32" N.
Longitude 6° 3' 51" W. of Greenwich.*

December.	THERMOMETER.		BAROMETER.	
Wednesday 28	from 26 to 39	29.91 to 30.09		
Thursday . 29	35 49	30.03 30.09		
Friday . . 30	48 55	30.10 30.05		
Saturday . 31	47 55	30.01 29.95		
<i>Jan. 1843.</i>				
Sunday . . 1	30 38	30.16 30.11		
Monday . . 2	26 36	29.94 29.97		
Tuesday . . 3	19 35	30.07 30.14		

Wind, S.W. till the evening of the 31st ult.; since N. by W. and N.W.

Except the evening of the 31st ult. when rain fell, generally clear.

Rain fallen, .025 of an inch.

CHARLES HENRY ADAMS.

WILSON & OGILVY, 57, Skinner Street, London.

THE LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, JANUARY 13, 1843.

LECTURES
ON THE
THEORY AND PRACTICE OF
MIDWIFERY,

*Delivered in the Theatre of St. George's
Hospital,*

By ROBERT LEE, M.D. F.R.S.

LECTURE XII.

*On the Liquor Amnii, Fœtal Membranes,
and Umbilical Cord, in the latter months
of Pregnancy.*

AFTER the fifth month the walls of the decidual cavity have usually coalesced, and the villi and cells of the chorion which were covered by the decidua reflexa have disappeared, and the placenta and membranes form a large sac, which adheres to the whole inner surface of the uterus, and contains the fœtus, umbilical cord, and liquor amnii. The *liquor amnii* is usually of a straw or orange colour, and has a faint but not very disagreeable odour. It is unctuous, and a little more dense than pure water. Sometimes it is flocculent, having grey, yellow, green, or black shreds floating in it, or it appears to be mixed with blood, and has a fœtid smell. Vauquelin and Buniva found it to consist of 98·8 water, 1·2 albumen, and salts of soda and lime. Geoffrey St. Hilaire says it contains atmospheric air; but Lassaigne and Chevreul believe that this gaseous fluid is a mixture of carbonic acid gas and azote. Tromherz and Gaugert found in it benzoic acid and urea. Dr. Davy has also detected urea in the liquor amnii; and there can be no doubt that this and the other constituents of the urine are secreted by the kidneys of the fœtus long anterior to birth, and that in a perfect state of the organs the urine is continually escaping through the bladder, and mixing with the amniotic fluid. Dr. Rees has more lately analysed the liquor amnii, and has found it to contain in 1000

parts, of water, 983·4; albumen, 5·9; albuminate of soda and chloride of sodium, 6·1; animal extractive, soluble in water and alcohol, urea, and chloride of sodium, 4·6; with traces of alkaline sulphate. Urea has not, however, been invariably detected in the liquor amnii. I induced premature labour for distorted pelvis in a patient six months pregnant by drawing off the liquor amnii, which amounted to thirty-two ounces. It was of a light straw colour; its specific gravity was 10·10: it was neither acid nor alkaline. Dr. Prout and Dr. Bostock analysed portions of it, but they could not discover any trace of urea or uric acid in its composition. Cases have been related in which saffron and sulphuric acid have been detected in the liquor amnii after they had been taken by pregnant women. Haller and Leuret state that in women who have used mercurial friction during pregnancy the liquor amnii has possessed the property of rendering copper white. From this and other facts I believe that the processes of secretion and absorption are constantly going on upon the inner surface of the amnion; though no blood-vessels nor absorbents have yet been demonstrated in this membrane. The quantity of liquor amnii varies in different women, and in the same persons in different pregnancies. Very often it does not amount to a pint at the full period of gestation. In one case sixteen pints escaped on puncturing the membranes. In a woman with great distortion from mollities ossium I drew off the whole of the liquor amnii at the end of the seventh month, and it did not exceed a pint. The liquor amnii distends the uterus during pregnancy, preserves the fœtus and umbilical cord from external violence, and assists in the dilatation of the os uteri during labour. It was the opinion of Hippocrates that the fœtus swallowed the liquor amnii; and this view of the nutrition of the fœtus was adopted by Harvey. "Quinetiam certum est," he observes, "intra pulli ingluviem (talisque prorsus in om-

nium embryonum ventriculus cernitur) substantiam quandam, colore, sapore, et consistentia dicto jam liquori persimilem reperiri; eandemque, in ventriculo aliquantum coctam, lac coagulatum referre: quam etiam, chyli specie, in primis intestinis deprehendimus, inferiora autem intestina excrementis stercoraceis referta sunt. Similiter in viviparorum in foetibus intestina crassiora consimili excremento replentur, quali eadem, cum lacte vescuntur, abundare cernimus. In ovibus etiam, aliisque bisulcis, manifesta sunt scybala. Quid dubitemus igitur affirmare foetum in utero sugere; et in eo fieri chylicationem, cum ejus manifesta adsint tum principia, tum reject amenta?" The fallacy of this opinion of Harvey and of later physiologists, with regard to the sources of the nutritious matter found in the intestinal canal of the foetus, is demonstrated by the facts, that the liquor amnii does not contain nutritious matter, and that acephalous children, and those born with the oesophagus impervious, have not only been perfectly nourished, but in their intestines substances have been found similar in character to those contained in the intestines of children in whom no such malformation had existed.

The foetal membranes in the latter, as in the early months of pregnancy, are three—viz. the amnion, chorion, and decidua. The amnion and chorion, after covering the umbilical cord and inner surface of the placenta, unite at its circumference with the decidua, which invests the uterine side, and extend from thence over the whole inner surface of the uterus. Though divisible into three layers, they may be considered, in a physiological point of view, as constituting only one membrane. When separated from the chorion, with which it is every where in contact, the *amnion* is a strong transparent membrane, smooth on the inner surface, and covered on the outer by a layer of gelatinous matter of no great thickness. The *chorion*, which was dense and opaque, and covered with villi in the early months, is now a very delicate translucent membrane, which firmly adheres to the whole inner surface of the decidua. Near the margin of the placenta some scattered villi are occasionally seen ramifying under the decidua. In the human chorion I am not aware that any blood-vessels have been seen in the early months, but I have distinctly observed decidua veins filled with injection ramifying upon the chorion in the eighth month. Mr. Dunn shewed me a portion of chorion in March 1841, in which veins were seen filled with yellow injection, which had flowed from the uterine veins, through those of the decidua, into the veins of the chorion. "That portion of the chorion," says Dr. Hunter, "which invests the foetal surface of the placenta, is thick, strong, and is so intimately

connected with the superficial branches of the umbilical vessels, that it seems to give them a coat; or they seem to run in a duplicature of its substance till they emerge in smaller branches to disperse themselves through the different lobes of the placenta." The smallest branches, even the capillaries, as well as the largest umbilical vessels of the placenta, have this coat from the chorion, as I stated before when describing the structure of the placenta in the early months of pregnancy.

The decidua, in the latter months, is a soft vascular membrane, of a yellowish colour, which invests the whole ovum. Numerous small tortuous arteries and veins pass from the inner surface of the uterus to the decidua, and ramify in it; or rather the arteries of the uterus terminate in the decidua arteries, and the decidua veins open into the veins of the uterus. The oblique venous canals which existed in the early months are not visible, and the general character of the membrane is greatly changed. At the neck of the uterus it is usually thin, and around the placenta it is thicker and more vascular than in any other part. Dr. Hunter says, that at the very edge of the placenta it splits into two strata, and is continued over both surfaces of the placenta, but especially its inner smooth surface, blending itself there inseparably with the umbilical portion of the placenta. Dr. Baillie has given the same opinion respecting the division of the decidua into two membranes at the margin of the placenta, and states, that "the layer of the decidua which lies between the chorion and the placenta is, in one case, much thicker than in another. It sometimes forms a smooth, tender, opaque membrane; but is more frequently reticulated, especially towards the edge of the placenta, looking somewhat like lace. Occasionally there are portions of it a good deal thicker than the rest, and which, shining through the transparent chorion, bear some resemblance to pieces of fat. This layer is generally thicker than that which adheres to the rough external lobulated surface of the placenta. It communicates with that other by means of the processes of the decidua, which pass between the lobules of the placenta and along the external surface of the umbilical vessels. These processes may be evidently seen to join it, and it is probable that they contribute principally to its formation."

Mr. Hunter says the placenta is certainly a foetal part, and is formed on the inside of spongy chorion or decidua, and that the decidua can be distinctly traced between the placenta and uterus, hardly ever passing between the lobuli of the placenta and the vessels of the foetus, never entering into it, and that of course none of the foetal vessels

ever come into absolute contact with the uterus. In some placenta I have distinctly seen a thin, yellowish, cribriform membrane lying under the chorion, which appeared to be continuous with the decidua at the margin of the placenta, as described by Dr. Hunter and Dr. Baillie, and I now believe that it exists in all placenta at the full period, though often recognised with great difficulty, and never seen in the early months.

The vascular system of the fœtus extends by the umbilical cord to the placenta, in which the processes of respiration and nutrition are performed. It consists of the two umbilical arteries, which convey the blood from the fœtus to the placenta, and of the umbilical vein which brings back the blood from the placenta to the fœtus. These vessels, with the obliterated duct of the vesicula umbilicalis, pass through a peculiar cellular structure, which contains a very ropy gelatinous fluid called the gelatin of Wharton. These cells of the cord freely communicate with one another, so that the viscid fluid wholly escapes from a cord that has been cut and suspended by one of the divided extremities. All these cells can be filled with air and mercury. In this preparation, after the fluid from the cells had escaped, they were filled with air, and also the arteries and the veins, and the cord was quickly dried in the sun. The whole is so transparent that the course of the arteries turning round the vein is beautifully seen. In some places the arteries run a little way without turning round the vein, or form solitary loops or folds in others: in this injected funis the arteries are likewise seen turning round the vein, firmly twisted in one part, and in other parts leaving the vein for a short distance and running nearly parallel with it. This spiral course of the umbilical arteries round the vein, and twisting of the whole cord, always commences and exists in the highest degree at the umbilicus of the embryo. It must, therefore, arise, as Mr. Streeter has suggested, from the action of the heart upon the arteries of the cord, and not from the simple rotatory movements of the embryo and fœtus. But it is difficult, or rather, impossible, yet to explain why the turning should generally take place from left to right, which is not accidental. "Whatever be the cause," says Dr. Hunter, "in most which I have attended to, the twisting of the navel-string has been in the same direction, namely, such as would be produced in turning the child round upon the navel as a centre, by pushing its head towards the right side, and its feet to the left. In two-and-thirty preparations now before me, four only are twisted the contrary way; and of the twenty-eight which are twisted in the common way, three have the contrary twist, for some inches, at the extremity which was towards the fœtus." The twist-

ing commences at a time when the embryo is wholly suspended by the funis; it is difficult, therefore, to believe that it takes place solely for the purpose of preventing the vessels from being affected by any stretching power. Nor can this turning of the arteries round the vein, and torsion of the cord from left to right, commencing at the umbilicus, take place for the purpose of retarding the fœtal circulation, as some physiologists have supposed. The rapid action of the fœtal heart, and the force of both ventricles being applied to propel the stream of blood through the umbilical arteries, prove that nature intended that the fœtal blood should circulate swiftly through the vessels of the placenta. Had it been otherwise, the pulsations of the fœtal heart would probably have corresponded with those of the parent.

In this large injected umbilical cord, you see the amnion and chorion distinctly reflected from the fœtal surface of the placenta, and forming its sheath, which extends to the umbilicus. The appearances are here also seen which led Professor Fohman to believe that he had discovered absorbents in the cord. He says, if you make an opening in the sheath of the cord, and put in a fine tube filled with mercury, you will inject all the absorbents. It is here quite evident that there is nothing but the cellular membrane under the sheath of the cord injected with the mercury, and the appearances are precisely similar to those represented in M. Fohman's Plate. Neither absorbents nor nerves have yet been demonstrated either in the umbilical cord or p'acenta, although I think it extremely probable they exist in both. In some cases the umbilical cord is thicker than the thumb, is of a livid colour, and loaded with serum. At other times we meet with embryos expelled in abortion, at the end of the second or third month with umbilical cords a foot in length, not thicker than a pack-thread, and twisted as firmly as the threads of a rope. This is a very good specimen of a long, slender, and firmly twisted funis, attached to an embryo of ten weeks. It is difficult to imagine that the heart of this embryo could possess a power sufficient to turn the funis round in this firm manner.

The average length of the cord is about eighteen or twenty inches; but it is often two feet in length, and it has in a few cases measured upwards of fifty inches, and has been twisted several times round the neck or trunk of the fœtus. In some instances it has been so short, that the child could not escape from the vagina till it was divided. The twisting of the cord round the neck of the fœtus is a very common occurrence. In 1920 cases, Dr. Churchill says it was observed 204 times. There can be no doubt that it is a very common cause of protracted labour. The twist-

ing of the cord round the neck is owing to a different cause from the twisting of the vessels of the funis from left to right. I believe in a great majority of cases it is produced by one of the arms receding from the thorax. I have observed this in so many cases that I have little doubt of the fact, and you have a striking illustration of it in this Plate accompanying M. Siebold's *Obstetrical Commentary*, entitled *De Circumvolutione Funiculi Umbilicalis*, Göttingen 1834. Both arms here have left the thorax; the left hand is closely applied to the left cheek, and the right hand to the right side of the pelvis. The cord on leaving the umbilicus passes up between the left arm and forearm, then round the neck, over the right shoulder, under the right axilla, along the abdomen to the inside of the right thigh, and then twists twice tightly round the right leg close to the insertion of the cord into the placenta. In another embryo delineated by Siebold, both arms have likewise left the thorax, and the twisting of the cord round the neck is evidently the effect of this. In this very recent embryo of three months, sent to me by Mr. Marshall, of Greek Street, the same thing is seen still

better; here the cord is about nine inches in length, and firmly twisted like a worsted thread. The left arm has quitted the chest, and the hand is applied to the left side of the face. The funis passes up over the right arm, which rests on the thorax, turns round the neck, then over the back part of the left shoulder, which it has marked deeply, and runs under the left axilla, across the chest up to the neck, the half of which it again surrounds. This specimen, and indeed all the others of this kind, certainly render the opinion of Mr. Streeter highly probable, that many cases of preternatural presentation may arise from twisting of the umbilical cord round the neck, trunk, or extremities of the foetus.

True knots are sometimes made by the foetus upon its own umbilical cord, and it thereby unconsciously, if I may so express it, commits suicide by compressing the vessels. I have seen two instances of this, and in both the knots must have been tied long before the labours commenced. In one the knot was ten inches from the umbilicus, and the cord also surrounded the neck of the child once. As you can see in the preparation, now



a, the membranes of the ovum turned over the surface of the fundus uteri; *b*, the parietes of the uterus divided: the dark spots are intended to represent the cut arteries and veins; *c*, the placenta, attached to the back part of the body, towards the left side; *d*, the cavity of the ovum laid open; *e*, the funis umbilicalis twisted round the neck and arm; *f*, the cervix uteri perfectly developed; *g*, os uteri, displaying its glands, as enlarged during pregnancy; *h*, the vagina.



An Engraving from Dr. Hunter's twelfth Plate, representing the placenta adhering to the cervix uteri.

A A, the fallopian tubes; B, the left ovary, at the lower end of which is seen C, the projecting corpus luteum; D, the right ovary; E, the group of spermatic vessels approaching the sides of the womb; F F F, the section of the substance of the womb; G, the inside of the vagina, which is laid open by a longitudinal incision and spread out; H H, The mouth of the womb; I, the external lobulated surface of the lower part of the placenta, which had originally stuck to the inside of the neck and mouth of the womb, but as parturition approached, the dilatation of these parts occasioned a separation, which was necessarily followed by a hæmorrhage; K K, the membranes cut through where they were coming out from the border of the placenta, and enclosing the most depending part of the child's head. The vacant space which is seen between the inside of the neck of the womb and the secundines, was full of clotted blood in the dead body.

before you, the vessels of which have been injected, the cord had been much compressed where the knot was tied. The child weighed five pounds two ounces. In the other the

cord is atrophied between the knot and the umbilicus. I have no doubt these were both formed early in pregnancy. Where the knot is not tight, as I saw in a case a few weeks

ago, the nutrition of the child is not affected by it in the slightest degree. Baudelocque gives a figure of a double knot on the cord. These appear to consist of two knots formed at different times. The foetus must have passed twice through a large loop of the cord.

The placenta, into which the umbilical cord is inserted, has usually a circular or oblong shape, and is much thicker in the middle than at the circumference. It varies, however, greatly in its form and dimensions in different cases. Sometimes it is nearly divided into two, like the placenta of twins, or has a small lobe, distinct from the mass, as Dr. Hunter states, into which the cord passes, or the cord terminates in the membranes before reaching the placenta. The placenta may adhere to any part of the inner surface of the uterus, but it is most frequently attached to the posterior wall near the fundus. In the figure (page 532), from Dr. Rambotham's Lectures, the placenta is represented adhering to the upper and back part of the uterus.

Explanation of Engravings of the Uterus, omitted in the last Lecture.

FIG. 1.—Posterior and lateral view of the gravid uterus in the fourth month of pregnancy, of the vagina, rectum, and bladder, with their ganglia and nerves.

A. The fundus and body of the uterus covered with peritoneum.

B. The vagina.

C. The bladder.

D. The rectum.

E, F. The ovaria.

G. The great sympathetic nerve where it divides into the two hypogastric nerves and plexuses. The arteries and veins of the great sympathetic are all injected in the preparation from which the drawing has been made. A little above the bifurcation of the great sympathetic nerve, there is a deposit of cineritious matter in its substance, and the nerve itself is enlarged as high as the kidneys.

H. The right and left hypogastric nerves and plexuses. The artery of the right is injected, and accompanies the nerve to the great ganglion at the cervix in which it terminates.

I. The left hypogastric or great utero-cervical ganglion, with an artery passing into it near the centre.

J. The third and other sacral nerves, sending numerous large branches into the posterior border of the ganglion, and the whole of its outer surface.

K. The hæmorrhoidal nerves accompanying the arteries to the rectum, and sending numerous branches to anastomose with nerves sent off from the posterior edge of the ganglion.

L. Branches of nerves with ganglia sent off from the left hypogastric nerve, which pass down on the inside of the ureter to the trunks of the uterine artery and veins, and enter ganglia which surround these blood-vessels.

M. The left ureter, with a nerve accompanying it, which passes into the vesical ganglion, situated on the anterior part of the ureter.

N. Rings of nerve, surrounding the uterine blood-vessels.

O. The middle vesical ganglion, into which large nerves enter, which are sent off from the anterior border of the left hypogastric ganglion, and pass on the outside of the ureter.

P. Broad flat ganglia, formed on the great plexus of nerves which covers the upper part of the vagina.

Q. The orifices of the divided veins of the vagina, which are completely encircled with ganglionic plexuses of nerves.

R. Filaments of vaginal nerves passing under the sphincter.

S. Large nerves covering the posterior wall of the vagina, and anastomosing with the hæmorrhoidal nerves.

FIG. 2.—Exhibits an anterior and lateral view of the gravid uterus in the fourth month, and of the vagina and bladder.

A. The right hypogastric nerve. B. The sacral nerves. C. The right hypogastric ganglion. D. Nerves from the hypogastric nerve to the ganglia on the blood-vessels of the uterus. E. Ganglia surrounding the uterine artery and veins. F. Ganglionic plexus, under the peritoneum on the fore part of the uterus. G. Filaments from this plexus passing out with the round ligament. H. The round ligament. I. The right ureter and trunk of the vaginal and vesical veins surrounded with nerves. J. Ganglia and nerves of the vagina. K. Nerves passing between the vagina and rectum. L. Ganglia and nerves of the bladder. M. Vaginal nerves passing into the bladder around the ureter. N. Blood-vessels and nerves of the upper part of the bladder. O. Plexus of nerves under the peritoneum on the left side of the uterus, the blood-vessels of which have not been injected. P. Filaments from this plexus passing out with the round ligaments. Q. The peritoneum of the anterior part of the body and cervix of the uterus reflected upwards, to expose the ganglionic plexuses situated below.

CLINICAL LECTURES,

Delivered at St. Thomas's Hospital,

By SAMUEL SOLLY, Esq. F.R.S.

Assistant-Surgeon, and Lecturer on Clinical Surgery, at St. Thomas's School.

LECTURE IV.

ON AMPUTATION IN CASES OF SEVERE INJURY.

GENTLEMEN,—We must this day consider the termination of the case of William Peters, the operation on whose foot I described in my last lecture. The end has been fatal, as most of you are aware. I will now endeavour to put you in possession of the facts of his case since the last report.

After carefully considering all his symptoms, and the probable causes of his death, we must see what light the dissection of his body will throw upon those symptoms during life.

Dec. 14th.—The great toe is discoloured. The sore looks healthy, and the tongue is clean and moist.

15th.—Great toe more discoloured; it is quite black, and will evidently separate, as the line of demarcation is distinct. Though not red, the wound is rather sloughy.

He does not look so well; he is very anxious about himself, and is never satisfied with any thing.

16th, 10, A.M.—He had violent shivering this morning; the dresser found, on inquiry, that he had not made water for about fifteen hours. He did not complain himself, but the

sister sent for the dresser. Mr. B. Travers jun. was there at the time, and passed the catheter, with some difficulty, on account of spasm.

I saw him at 3 P.M. at the request of the dresser, on account of his rigors and muttering delirium. His tongue was not quite so moist; his pulse was weaker and quicker. I ordered him

Ammon. Carbon. gr. v.; Tinct. Aurant. ʒij.; Tinct. Opii, ℥xv.; ex Misturâ Camphoræ 6ta horâ. Increase the quantity of brandy and wine to ʒviij. each.

I saw him again at 10 P.M. Much worse: countenance pale and anxious: he was rambling and delirious, but he knew me when I spok to him. Pulse weak and quick.

17th.—Much worse. Great toe quite black; the whole foot looks pale and flabby; the wounds are dirty and sloughy. The left upper extremity is swollen from the hand inclusive up to the middle of the upper arm, discoloured in patches, very tense. Tongue slightly dry, but not furred; pulse weak and rapid; countenance miserable. As Mr. Green was going round at the time I paid my visit, I got him to see Peters. He did not suggest any alteration in the treatment, and he feared that nothing would avail him.

10, P.M.—Worse; he is sinking, but quite sensible; and, though there is a wildness in his eye and general appearance, he is not delirious. He had been throwing his arms about, and drawing up his feet, picking the bed-clothes, wandering in his mind a little at intervals, and then talking quite sensibly to his wife. The same appearance has commenced on the right arm as already observed on the left. I learned from the sister that the first appearance of gangrene was in a round purple spot just above the elbow, and the wrist was swollen. She first observed it at 8 A.M., and is certain there was nothing the night before. As she washed him regularly, I have no doubt of the truth of her report.

He died, quietly, about one A.M.

From the time this poor fellow was admitted, to the hour of his death, he was, to use the words of the sister, “in a perpetual fidget, never satisfied with any thing, but continually dwelling upon the loss of his property.”

Now that you have heard the state of the man detailed up to the moment of his dissolution, your proper inquiry is, What is this state—how is it to be designated—upon what structural changes does it depend—what causes have produced these changes? It is very seldom that such a case occurs, and its rarity and fatal character render it pre-eminently interesting. This man's condition has been admirably described by my old master, Mr. Travers. I am not aware that any sur-

geal writer has so clearly pointed out its characteristics. This is a case of pure *gangrenous inflammation*, and must be distinguished from simple gangrene. In the one the affected limb is black, dry, shrivelled, and insensible, cut off from the sound and healthy portion of the limb by a barrier of adhesive inflammation, which is marked on the surface by a red line, upon which ulceration supervenes, and the dead and useless portion is thrown off from the living system. In gangrenous inflammation no such barrier is set up. The part affected is swollen, discoloured in patches, vesicated, moist, and insensible, without any line of demarcation. The appearance presented by the arms of this poor fellow was exactly that which you see in a subject which has died in very hot weather, and in which decomposition has taken place with great rapidity. But I must read to you Mr. Travers's own words:—“Gangrenous inflammation, then, is distinguished from gangrene, in being, whether primary or secondary, a constitutional and not a simply local action; not that any local process can be conducted without more or less involving and depending upon the constitution for its event. Like erysipelas, it sometimes appears without any obvious cause; and at others is superadded to a lesion, or an inflammation already existing, and not previously affecting a character of destruction. Gangrenous inflammation is rare; whereas gangrene is very common. They are seen asunder, when the inflammation stops short of actual disorganization and loss of substance; as we say, ‘threatening,’ or, ‘on the very verge of gangrene;’ or when the powers of life fail during the first stage of the action, as is not very unusual. In some most acute cases of gangrenous inflammation no further change than a deep and extensive discoloration of the part affected, with a sensible loss of temperature, occurs; in fact, a stagnation of its circulation. I have seen large surfaces, as the arm and corresponding part of the trunk, and one of the lower extremities, and in fact one half of the body, thus attacked. In these cases the highest degree of delirious excitement passes rapidly into the state of dissolution, as described by Mr. Hunter.

Acute gangrenous inflammation is commonly more dangerous, from the typhoid fever which attends it, and the rapid, even sudden, prostration of strength, than from the existence or extent of the destructive action upon the part. It is always accompanied with much excitement of the nervous, and an habitual loading of the pulmonary and venous system. The loss of balance on the venous side of the circulation is apparent in the undue change of the blood in the capillaries, and the early effusion of their contents upon all the exhalant surfaces. The

cases of gangrenous inflammation more commonly met with are those in which phlyctenæ and discoloured patches precede the actual death of a portion of the soft parts. These are more hopeful in proportion as the previous state is apparent; and admits, as in the case of over-repletion or starvation, of a gradual correction of the errors of the system."

How strikingly the case before us proves the correctness of Mr. Travers' views regarding the constitutional character of this affection.

The gangrenous inflammation is not even an extension of the original injury. It attacks a part entirely remote from it. It commences in the hand, and extends upwards to the trunk. The leg and thigh of the injured extremity are not even swollen.

The rapidity with which this affection progressed is also worthy of notice. On the 13th he was going on well in every respect. On the 14th the great toe is discoloured, but the wound looks healthy, and the tongue is clean and moist. On the 15th, the wound, for the first time, looks sloughy; he complains of thirst, but the tongue is clean, and the pulse rather quick, without much power. On the 16th he is much worse, has shiverings, retention of urine, and, during the night, the hand and arm begin to swell, and he dies at twelve o'clock at night on the 17th; not in a state of violent delirium, but perfectly sensible, and conscious of all around him.

I have no hesitation in designating it a case of true gangrenous inflammation. Our next consideration naturally is, what is the cause of this condition. Is it occasioned by diseased viscera? Are the organs of vegetative life so altered in their structure, that, under the shock of the operation, conjoined to the accident, they have failed in the execution of their duty? These cases certainly are generally the result of a previously diseased organism. But I think, if such were the case in this instance, that he would not have gone on so well for the first seven days after the receipt of the injury. Besides, there has been no indication of disease of the brain, or of the heart, or the lungs. I examined these carefully during life, and could detect no lesion. The bowels have been scarcely disturbed; in fact, there has been no reason whatever to conclude that there was any disease of any of the chylopoietic viscera. And the circumstance of his not having voided his urine, I attribute rather to that deficiency of power in the bladder, which frequently precedes dissolution, than to any disease of these organs. So that I really do not expect, gentlemen, that we shall find any morbid appearances in any of the viscera.

Thus, we again revert to the question of the proximate cause of this gangrenous inflammation.

Anxiety of mind I believe to have been the principal cause of this poor fellow's dissolution, acting upon a system shaken by a severe accident and painful operation, accompanied with some loss of blood; for though the operation itself did not occupy many seconds, the searching for the small arteries afterwards did, and gave him a great deal of pain.

The whole quantity of blood lost, from first to last, could not have exceeded 24 ounces; I should think it was hardly so much, but it is difficult to estimate it. This quantity will, however, often produce, in combination with other causes, very serious effects: indeed, you cannot be too careful in restraining hæmorrhage. It is easy enough to take blood away, but very difficult, in these cases, to restore it just when the nervous system requires it. We next, then, come to the moral causes; and as I regard these of the greatest importance, not merely in this case, but in every case of operation, I shall dwell for a few minutes upon them. He was naturally an irritable, though a kind man. He had been once in the possession of property in houses, which brought him in an income of 350*l.* per annum. By an error of his own, (I believe the fact of his building four houses on a piece of land where the terms of lease allowed only three,) he lost the greater part of his property, and was left with only 40*l.* a-year. Under these circumstances, he procured employment as a common labourer in Woolwich dock-yard. His first question, soon after the operation and dressing the limb was concluded, was, "Shall I recover, sir, for I have a wife and children, and I wish to make my will so as to provide for them?" And although I told him then that I had no doubt of his recovery, he never seemed to expect it himself; he was always, to use a common expression, out of heart. Only contrast the difference of manner of this poor fellow and that of Burn; the one always cheerful, and confident of recovery, and the other downcast and desponding. If Burn had had the temperament of Peters, he must have sunk long ago. My firm conviction is, that there is no visceral disease, and that mental anxiety occurring in a system shaken by injury and loss of blood is the cause of death; but you will soon see more for yourselves in the dead-house. As we have, however, another body to examine to-day, I must say a few words about his case, as well as that of Burns, to which I have already adverted.

James Burns was admitted on the 10th of November, with a compound fracture of the tibia and fibula. There was a wound on both sides of the leg, about three inches in length, communicating with the fractured bones, which were both comminuted, and the tibia split down into the ankle-joint. The

accident was occasioned by the fall of a heavy weight of iron on the leg. The extent of injury did not allow one to doubt as to the necessity of removing the limb, which was done, as most of you saw, in the ordinary manner. Since the operation, he has been nearly carried off by diarrhoea, but which is now entirely checked, and the stump healing kindly, so that I need not detain you with any further particulars.

You will most of you remember that I had scarcely concluded the above operation, when another poor fellow was admitted, with a very similar injury. This was Joseph Blackman, whose body we shall inspect to-day.

This man was 62 years of age, a brewer's servant, a stout, flabby, unhealthy-looking man, with chronic bronchitis; so that a more unfavourable subject could not have been selected for operation. But the injury was so severe that amputation alone afforded a hope of saving his life. The accident was occasioned by the fall of a barrel of beer. The tibia and fibula were broken into the ankle-joint, which was laid open, and the astragalus completely smashed; the wound of the soft parts extending on both sides of the joint. He complained also of his back, which had been bruised by the fall. I removed the limb just below the knee-joint, in the usual way, with a circular incision.

I made the flap entirely of skin, cutting through the muscles even all round.

The arteries were easily found. I put on five ligatures; there was very little blood lost. I dressed the stump about an hour after amputation, uniting the edges with sutures and three broad stripes of plaister.

Ordered—Tinct. Opii. ℥x.

Spirit. Am. Arom. ʒj.

Mist. Camph. Hæc nocte repetenda si opus sit. This draught was repeated.

19th.—He took 80 minims of opium; passed a good night; expressed himself comfortable in the morning; pulse 143; his cough is very troublesome; he says it shakes him sadly. There is a loud sonorous bronchial rale over the upper part of the chest. Ordered—Empl. lyttæ amplum pectori. Pil. ipecac. c. conio gr. v. 6ta. horæ. Linctus pro tussi. Bowels have been opened; motions healthy. Repr. haustus.

20th.—Looks well, and says he is comfortable; pulse 124, full; back better; stump looks well; cough much easier; the blister not yet removed; says he does not mind it.

I need hardly tell you that I consider it no light matter to apply a blister to a patient so soon after such a serious operation; but as it was evident to me that unless I could arrest the bronchial inflammation the poor fellow must sink, I was certain that this was the best remedial agent that could be employed.

21st, 1 P.M.—Says he is in no pain, but that his cough is rather troublesome: breathing not quite so free as yesterday.

11 P.M.—I was sent for by the dresser in consequence of his having a severe attack of dyspnoea. When I saw him I found him breathing with great difficulty; considerable mucous râle in his trachea; loud bronchial râle all over the chest; countenance anxious and distressed; cold perspiration; pulse 130, not so full as yesterday, but with a fair volume under the finger. The assistant apothecary, who had seen him, ordered him Spirit. Aeth. Sulph. c. ʒj.; Mis. Camph. 6ta horæ; and another blister to the chest. Of the medicine he had had one dose about 20 minutes before I saw him.

I ordered him to be cupped between the scapulæ, and continue the medicine: the next dose to be given in 4 hours. I watched the effect of the cupping; after 4 ounces had been taken it produced an effect upon the pulse, diminishing it in volume, and adding to its frequency, making it 140. I stopped the bleeding after taking 7 ounces. He does not look as if he could live many hours.

21st, 9 A.M.—Breathing relieved. Is decidedly better this morning. Stump is unhealthy; very deficient in action. Pulse 120, medium strength. Ordered Brandy ʒij. in arrow-root. Pil. Scillæ co. gr. 6ta. horæ.

22d.—Much the same. The chest, where it is not sore with the blister, to be painted with the tincture of iodine.

23, 9 A.M.—Dosing: had the opiate draught last night; has been slightly delirious during the night. Expresses himself comfortable; his breathing is decidedly better. Did not disturb the stump. The sister thinks that the iodine relieves the breathing. Ord. Decoct. senegæ ʒij.; ammon. carbon. gr. v. 6ta. horæ; brandy ʒij. Beef tea.

4 P.M.—Breathing better; cough easier; less pain in his back; pulse better; dressed the stump; a little more action in it, but still sloughy; ordered repr. haust. Omit. pic. scillæ.

24th.—Better in every respect. Mr. Tyrrell recommended 1 pint of porter in addition to the other matters.

25th.—Stump sloughy. Lot. soda chlor. Gin ʒiv. daily.

27th.—Not worse. Has passed a quiet night; did not have the opiate, but a strong glass of gin and water; breathing easy.

December 3d.—Stump still sloughy; brandy ʒvi.

6th.—Has gone on pretty well; stump healthy; slough separating; cough more troublesome. Ordered to omit the porter. Empl. lyttæ to the chest.

7th.—Has had a good night; cough much better.

8th.—Day thick and foggy; cough more troublesome.

9th.—Day very foggy; cough very troublesome; has had a very bad night; stump tolerably healthy.

10th, 9 A.M.—Cough very troublesome; large quantity of mucus in the trachea; has been very restless, rambling all night long; pulse quick.

4 P.M.—Worse: mucus increased; breathing very difficult; pulse rapid, but not very weak. Ordered *c. cruenta inter scapulas* ad ʒiv. or ʒvi.

Some glasses to be put on dry; four ounces were taken, and gave some relief.

11th.—No better; breathing very difficult. To leave off the pills, and take the sulphuric æther in camphor again.

12th.—Much worse; breathing so laborious that he looks as if he could not live many hours.

13th.—A beautiful warm sunshiny day; a little better.

14th and 15th.—Not much change; stump healing.

16th.—Much the same; rather weaker, and cough troublesome, but the stump is healing.

17th.—He died suddenly this morning, apparently suffocated by the collection of mucus in the trachea.

In the daily reports, the state of the bowels has not been mentioned, as the motions were regular and healthy.

The practical point of interest was the complication of the case by the chronic bronchitis, which, however, was so much relieved by treatment, that his wife said at one time that his cough was better than it had been for some time. The general principle of the treatment was local depletion and counter-irritation, with general support. With regard to the medicine, he derived very decided benefit from the decoction of *senega*, ʒij. , with *ammonia gr. v.* every six hours. He was a good deal influenced by the state of the weather, but his vital powers were evidently not sufficiently good to resist the depressing effects of the disease. The stump, though sloughy at first, had become healthy, and was advancing towards union at the time of his death, which occurred just a month from the time of the operation.

Mr. Solly then proceeded with the pupils to the Dead-House, and the following report is given by Dr. Thomas Williams, who inspected the bodies:—

Joseph Blackman, æt 64, Isaac's Ward, admitted November 18th; died December 17th; examined on the 29th, 1842.

Appearance of the Body.—One month since this man underwent the operation of amputation of the leg, performed by Mr. Solly. The anterior segment of the flap had undergone sloughing to such an extent that the denuded tibia projected beyond the stump, but the edges of the flap approxi-

mated posteriorly, and imperfect adhesions had taken place. The chest was unusually prominent and resonant, except at the lower and posterior part.

Head.—The calvarium was adherent to the dura mater. Mr. Solly, in his remarks upon the case to the pupils, observed, "that this adherence of the dura mater to the skull was a circumstance seldom met with in old age; and when it occurred at this period of life, he regarded it as indicative of increased vascular action. The case of the skull contained a little larger quantity of fluid than usual. The arachnoid presented the character of uniform opacity. The large blood-vessels at the base presented in their coats numerous points of ossification. The brain itself was healthy. Hemispherical ganglion pale.

Chest.—The heart, on its right side, was slightly dilated—the left ventricle somewhat hypertrophied. The mitral valves were slightly thickened, but quite flexible. The ascending portion of the aortic arch was somewhat dilated. The lungs were prominent, and retained the dilated state proper to that of full inspiration. In structure, both lungs were spongy, but not crepitant. Although no pneumonic consolidation could be anywhere discovered, repeated pressure would not empty the bronchial vessels of air. In every portion examined, extensive evidences of bronchitis were observed; even the minute branches of the bronchi were charged with a large quantity of frothy serous fluid. Mr. Solly observed that this was precisely the condition which his examination before death had led him to anticipate. In the substance of the inferior lobes of the lung, circumscribed patches could be felt, which Mr. Solly pointed out as examples of *lobular pneumonia*, supervening upon the attack of bronchitis, resulting from continuity of structure.

For the most part the terminal vessels of the lung were permanently filled with air, although the bronchial ramifications were considerably obstructed with fluid. This condition I have observed to be almost always the *post-mortem* consequences which an acute attack of bronchitis leaves behind. It can scarcely be called *emphysema*, although the vesicles are dilated, and the character of percussion unusually resonant.

Abdomen.—The liver was somewhat enlarged from engorgement, but not otherwise unhealthy.

The stomach was contracted into a comparatively narrow tube. The pyloric half was smaller in calibre than the duodenum. The cardiac half was larger. From the middle of the lesser curvature, an irregular lobulated tumor proceeded, which occupied nearly the whole cavity of the lesser omentum. It consisted of several almost indepen-

dent globular portions; united, however, to each other by continuity of structure. The tumor extended downwards, behind the stomach, as far as the superior edge of the pancreas. After the examination of the sections, Mr. Solly distinguished this tumor as a good example of encephaloid carcinoma. After the inspection of the mucous lining of the stomach, he remarked that the reason there were no symptoms of this disease during life was the limited extent to which this membrane of the body was involved, and in all probability that even this was very recent, and the fact that the tumor did not obstruct either the cardiac or pyloric orifices. That it did not attract the eye to the region or the epigastrium, they saw was explained by the mechanical circumstance of the flat and expanded form of the tumor, overspread too by the left and a large portion of the right lobe of the liver.

Mr. Solly said that it was a singular circumstance that even the attention of the patient himself had never been directed to the seat of the tumor by any of those acute, shooting, and lancinating pains which, for the most part, characterize the origin and progress of this form of malignant disease.

No mark of morbid change could be found in any of the other viscera.

Taken from the *post-mortem* record, St. Thomas's Hospital.

William Peters, aged 50 (William's Ward,) admitted December 8, under Mr. Tyrrell; died December 17; examined on the 19th.

Appearance.—The body was sound, well-formed, and muscular. The toes of the left foot had been removed by amputation performed by Mr. Solly. There was no discolouration of surface of the lower extremities. No induration could be discovered in the veins leading from the stump. The left arm was considerably swollen from the shoulders to the fingers. In several places the cuticle had been raised by effusion. The colour of the arm was dark livid.

Head.—Mr. Solly has reported to me that no pathological evidences were to be found in the brain, which was examined by himself.

Chest.—Heart and lungs healthy, with the exception of a slight hypertrophy of the left ventricle.

The lining membranes of all the cavities stained with blood, but not inflamed.

Abdomen.—The liver was healthy.

The intestines were tympanitic; from the duodenum to the sigmoid flexure they were distended to about three times the natural diameter. There were no changes of structure.

Spleen.—Dark and checkered with green patches. This organ was more decomposed than any of the other viscera.

Vessels.—The large vessels, veins, and arteries of the trunk were examined. The

lining membrane of the thoracic aorta was more vascular than usual. The larger veins, the axillary and subclavian, presented a similar but obvious vascularity, but there was no fibrinous effusion; and Mr. Solly did not consider the colour as indicative of inflammatory action, but rather of sanguineous transudation. The anterior tibial and femoral vessels of the left leg were examined without discovering any decided mark of morbid change.

Arm.—The skin of mortified arm could be readily stripped away. The subcutaneous tissue was greatly extended, and infiltrated with a dark-coloured serum. The whole appearance was that of a putrid subject which had been dead many days. There was no actual disorganisation of the structures of the arm—that is, all the anatomical elements, muscles, vessels, nerves, fascia, &c., could be separately examined. It was observed that the veins were larger and more dilated than in healthy state. The blood which they contained was partly liquid and partly coagulated. The coats of some of the larger vessels of the trunk were found to contain a few atheromatous deposits.

REMOVAL OF THE OVARIUM.

To the Editor of the Medical Gazette.

SIR,

My attention has been called to a statement by D. H. Walne, Esq., Surgeon, dated Guilford Street, Russell Square, 12th Dec. 1842, inserted in your number of the 23d ultimo, giving an account of the removal of a diseased ovary, by the large abdominal section.

In that statement, the particulars of which are very creditable to Mr. Walne, that gentleman has fallen into the error of supposing, and, as a necessary consequence, of declaring also, that after the publication of Lizars' cases of a similar operation, which appeared many years ago, "an extraordinary apathy on the subject continued to affect the whole of the profession in Great Britain"; and that he (Mr. Walne) is not aware of the operation having ever "till within these few months been repeated by a British surgeon." He adds farther his belief "that it never had been performed at all in England, before Dr. Charles Clay, of Manchester, on the 12th of September, 1842, operated in his first case; nor in London until in Novem-

ber, the 6th instant,' of the same year, he (Mr. Walne) operated in the case he has recorded in your journal.

The annexed paragraph, taken from the *Literary Gazette* of the 31st March, 1827, inserted therein by an eye-witness, one of the present professors in University College, will serve to inform Mr. Walne that he has assumed a credit to himself which belongs to another: and as I feel assured that he has done so unwittingly, so will he be glad of the opportunity of rectifying his erroneous declaration. The fact is, that even before the case recorded in the *Literary Gazette*, an attempt had been made, also by myself, to remove another similar tumor by similar means the year *previous*, in the presence of Mr. (now Sir Benjamin) Brodie, who, with the rest of the professional spectators on the occasion, considered it inexpedient and unsafe that I should proceed farther with the operation, when, after exposing the cavity of the abdomen through an incision of nine inches and a half in length, and bringing a large ovarian tumor to view, very extensive adhesions by firm bands were discovered between it and the adjacent viscera and peritoneal coverings.

In this latter case the patient recovered most completely from the effects of the operation as far as it had gone. In the former case the patient died on the third day after the operation, from the effect of exhaustion consequent on the abstraction of blood from the arm, ordered under an over-anxious apprehension, on the part of the medical assistant left in attendance on the patient, of what appeared to him to be the coming on of peritoneal inflammation.

I have no doubt that these facts must be in the recollection of Dr. Macleod, as both cases were patients at the same medical institution, at which we were colleagues at the time of their occurrence, and one of them, indeed, (Mary Hewitt's, the woman from whom the ovarian tumor was extracted), was a patient of his, transferred by him to my department.

I certainly take blame to myself for having omitted to publish, at the time, a full professional statement of the two cases in question, considering how important a step in obstetrical medicine is the operation alluded to. That task would have been an easy one, as, thanks to Professor A. T. Thomson,

who had taken full notes of the operation on the spot at the time, I was put in possession of, and retain still, the means of giving precision and authenticity to my details. But many hundred other engagements supervening in an ever-busy and laborious career, I was prevented from carrying into effect the intention I had of giving to the medical world a practical account of so important an operation; performed upwards of fifteen years before either Dr. Clay or Mr. Walne thought of operating.

This duty to the profession, however, I hope I may find leisure to perform at some future and early opportunity, and of adding many other interesting facts from my obstetrical practice, which I relinquished five years ago, after twenty years of incessant exertions in it, by which my health became seriously endangered.—I am, sir,

Your obedient servant,
A. B. GRANVILLE, M.D. F.R.S.

109, Piccadilly, Jan. 5, 1843.

From the Literary Gazette, March 31,
1827.

“EXTRAORDINARY SURGICAL OPERATION.—On the 21st instant, a tumor weighing upwards of eight pounds, and in magnitude larger than the human head, was extracted entire from the abdomen of a woman between thirty and forty years of age, by Dr. A. B. Granville. Notwithstanding the extent of the incision, nine inches in length, no bowel was permitted to protrude; and the quantity of blood lost did not exceed two ounces. The results likely to follow from determining the facility of such an operation are very important. Mr. Keate, Mr. Eade, Professor Pattison, Dr. A. T. Thomson, and Mr. Wade, Apothecary of the Westminster Dispensary, assisted, and were witnesses of the operation.”

N.B. The ovarian tumor and cast are in the possession of Mr. North, Surgeon, Lecturer on Midwifery; to whom I made over my collection when I gave up midwifery.—A. B. G.

FRACTURE OF THE FEMUR IN A FEMALE 89 YEARS OLD.

To the Editor of the Medical Gazette.

SIR,

ALLOW me to put on record the following instance exhibiting the *vis mediatricis naturæ* favourably developed in the successful and speedy termination of fracture of the os femoris in a female subject of the great age of eighty-nine years.

Sept. 10, 1842.—Mrs. F., a meagre person, of temperate and regular habits, sustained a fracture of the left femur while in the dusk of the evening passing across the road and coming in contact with a horse and light baker's cart, the driver of which did not perceive her. On my seeing her a few minutes afterwards the nature of the injury was apparent. She was removed to her house, and the fracture ascertained to be oblique, and near the centre of the bone.

Apparatus not being at hand, she was placed in bed, the limb encased in pillows, so as to form a double inclined plane. Next morning, Sept. 11, the fractured portions were placed in exact apposition, after considerable difficulty in retaining them in situ. The limb was put on the double inclined plane formed by Macintyre's apparatus, with a long splint outside, another, shorter, inside the thigh, and each well padded. Thus was the extremity comfortably secured, and thus it remained, without a single untoward or bad occurrence, until

Oct. 26, the forty-fourth day, when the apparatus was removed, and the fractured part found to be firmly united, the tumor of callus being small, but sufficient to shew the perfection of the cure, and allow motion of the limb in any direction. In a few days, by appropriate treatment, she was enabled to put her foot to the ground, and even to step out bearing the weight of the body. She has long ago been able to move without the aid of a stick: has been out of doors, and perfectly competent to take exercise on foot when the weather permits. No deformity existing in the parts.

This case is placed before the surgical world, particularly the junior portion, not to be too dissipated in prognosticating osseous union in subjects far advanced in life; as in this in-

stance, at first, it was pronounced not at all likely that any thing further than cartilaginous union would take place, and that therefore Mrs. F. would terminate her days as a cripple, from want of power in the system to unite the fractured bone. It is hoped its relation may call forth the remarks of any similar instances occurring in the practice of some of your numerous readers and correspondents.—I am, sir,

Your obedient servant,

WILLIAM F. HENDERSON, M.D.
Surgeon, &c.

Clapham Rise, Jan. 5, 1843.

PRUSSIC ACID IN DISEASED CORNEA.

To the Editor of the Medical Gazette.

SIR,

IF you deem the following case of diseased cornea, &c., worthy of a place in the MEDICAL GAZETTE, I shall feel myself obliged, while I have the honour to be, &c. &c.,

G. K. H. PATERSON,
Surgeon.

Perth, December 31st, 1842.

CASE.—M. J. æt. 29, of a strumous diathesis, has been repeatedly attacked with inflammation in both eyes alternately, accompanied with more or less intolerance of light, and pain of head, ever since she had small-pox, about her ninth year: to relieve this her friends sought various means, but without any avail, and on entering her eighteenth year she became blind. The catamenia had never appeared before she was twenty; and from that period onwards, till about four years ago, menstruation had always been scanty, and attended with the usual symptoms of dysmenorrhœa.

On the 26th September, 1842, her eyes presented the following state:—The right cornea transparent, with an unusual quantity apparently of aqueous humour on the anterior chamber, so as to give it externally a somewhat conical aspect; iris of a dark red colour, and its pupillary edge contracted to the size of a pin-hole, and in close contact with the capsule of the lens. No vision in this eye remaining. That of the left cornea was all but opaque, from coagulated lymph between its layers,

with the exception of a small lucid segment, at the upper and outer margin of its circumference; behind which, on the eye being turned downward and inward, the pupil could be seen contracted also, and of an oblong shape, along with a greater increase of aqueous humour in the anterior chamber, and the cornea, to external appearance, much more bulged forward than that of the right. With this eye she could only distinguish an object when it was rolled downward and toward the inner canthus, on being passed between her and the light.

This ill-fated woman being altogether an object of charity, her friends solicited me to take up her case, of which I was not at all sanguine. However, having previously perused, with much pleasure, a brief extract by Dr. Turnbull, on the fumes of prussic acid as a valuable remedy in certain diseases of the eye, I was led to make trial of a few applications of it in the above case, according to his method; and I must candidly confess, that ere long I was completely astonished on observing the rapid effect it produced on the opaque cornea before mentioned; more so, as the longer I cautiously and perseveringly used it, the greater in proportion did the inspissated lymph become absorbed, and the layers of the cornea, over a wide space, begin to assume their natural transparency, as also in dilating the pupil to a considerable extent; so much, indeed, that before one month under its use, she could observe objects in a very different light, and ere another had elapsed, she could find her way out of doors by herself, and come to my residence for any medicines she required; since which she has gone on gradually to progress favourably, without any more applications, and the vision is now sufficient to enable her to go about free from the dread she had before, or the use of a guide. During the use of this potent remedy, it struck me very forcibly that the extract of belladonna might assist the case considerably (more especially when one had reasons for suspecting adhesions to exist), in keeping up a greater effect on the pupil than that arising from the use of the acid, which every one will admit at once, who has seen its powers depicted upon the human eye, to be only temporary, and, I believe, still less

so in disease of the cornea and iris than in any other incident to such an organ. With such an object in view, and after once applying the extract, smeared round the eye, at bed-time, I soon found it to be also of considerable service, along with the daily use of the fumes of the acid, which were both afterwards employed assiduously in this manner, for the rest of the treatment.

But in drawing my remarks to a close at this time, I cannot refrain from saying less, in regard to the utility which is likely to arise from this medicine when properly applied, than that, in such a similar case as I have stated, I would not for a moment hesitate again in giving it and the extract of belladonna a fair trial, so convinced am I now, after employing it pretty freely by itself, in different affections of the same organ (in all of which more or less improvement of vision was manifested), of its potency to remove many of those formidable diseases of the eye, more especially that of the cornea, which are so often the opprobrium of our art. However, before I have done, it is but justice to ascribe this noble discovery to Dr. Turnbull, whose indefatigable research has not failed to find out others, no less wonderful in their effects, as they are useful to mankind; and for such he cannot but claim to himself the best thanks of the profession at large.

THE FUNCTION OF THE SPLEEN.

To the Editor of the Medical Gazette.

SIR,

AFTER some investigations which I have been pursuing, I have come to a conclusion which I think renders the nature of the spleen no longer questionable. I shall just now content myself with stating the chief points in the rationale of the decision.

All the fluid productions of the system necessarily have their producing structures. The observation seems trite, yet it is necessary. For producing the bile there is the liver; for the urine, kidneys; for the chyle, mesaraic absorbents; but is there any fluid existing in the body which has no organ assigned for the production of it? There is. What organ of the body forms the blood? The heart propels it; the ves-

sels distribute it; the lungs aerate it; the chylous supplies replenish it; the kidneys and liver purify it; but what organ *forms*—what organ *produces* it?

When I find a certain fluid going into an organ, and a certain fluid coming out of an organ, and none other fluid than this either coming out or going in, I naturally come to the conclusion, that such organ is for the purpose of exerting an agency over the fluid in question. The fundamental constituent of the blood—that element which peculiarly constitutes it blood—is the red principle of that fluid. The source of all the other constituents of the blood can be accounted for, but in what region of the system is it that the red principle of the blood is elaborated? The lungs *alter* the colour, but where is it that the colouring principle is *produced*? A product cannot be furnished without some part of the system to furnish it. Nobody seems to have thought of this necessity, that the red principle of the blood must have some source; and then it has next to be settled what that source is. I shall not here enter into a *detail* of those instances of impaired states of the system, in which the red principle of the blood is defective, and in which, at the same time, the spleen palpably and principally is known to be at fault—such as in the pallor attending the sequelæ of intermittents, and in the systemic etiolation characteristic of chlorosis; but I will simply remark, that in these instances we have a visible defect in the system, and an especial organ perceptibly deranged; and the concomitants point out plainly enough that the one condition is dependent upon the other. In fine, I think, for the future, we shall have no difficulty in deciding that the function of the spleen is the formation of the hæmatosine of the blood—that fundamental constituent of the fluid which peculiarly constitutes it blood. The spleen is the laboratory for the red principle of the blood.

I have the honour to be, sir,

Your obedient servant,

BURTON GEO. HAYGARTH, M.D. Gl.

Physician-Accoucheur.

Launceston, Van Diemen's Land,
Wednesday, 13th July, 1842.

CASE OF

IMPERFORATE PHARYNX,

WITH AN IRREGULAR FORMATION OF
ŒSOPHAGUS, AND IMPERFORATE ANUS.

To the Editor of the Medical Gazette.

SIR,

IF you think that the following description of parts is of sufficient interest to merit insertion in your journal, I shall be happy to place it at your disposal.—I am, sir,

Your obedient servant,

GEORGE MILLETT DAVIS.

71, Great George Street, Liverpool,
December 31st, 1842.

A child of the full period, well formed in every particular, with the exception of a spina bifida in the lumbar region, and the absence of an anus, lived thirty-six hours, a small quantity of matter, evidently from the intestines, having been discharged by the urethra, and symptoms of suffocation having been produced by the administration of a little cream and water.

On examination after death I made the following observations:—

The pharynx, an inch and a quarter in length, terminated abruptly, forming a cul de sac.

From the posterior and upper part of the trachea arose a few muscular fibres, which, taking their course downwards behind, and attached to the trachea, deriving also a few fibres from the anterior part of the pharynx, a little above its termination, ended in a complete, well-formed, and so far perfect œsophagus.

On laying open the trachea I found a rounded aperture, about one-eighth of an inch in diameter, immediately above its bifurcation, admitting of the passage of a probe into the œsophagus, which, from this point, became free, and took its usual course to the stomach. This opening was situated in the posterior part of the trachea, and at least an inch below the point from which the first fibres of the œsophagus arose.

The rectum terminated in a pouch, having a communication with the prostatic portion of the urethra large enough to permit the introduction of a small probe.

All other parts were formed na-

turally, excepting that instead of two kidneys there was only one, of a horse-shoe shape, placed across the vertebral column, having two ureters, and two capsulæ renales.

The point which appears to be chiefly interesting is the fact of an opening having existed leading from the trachea into the œsophagus.

ON

THE PATHOLOGY OF BURNS,

By JOHN E. ERICHSEN.

(For the London Medical Gazette.)

THE frequent occurrence of structural changes in the organs contained within the head, chest, and abdomen, as a consequence of severe or extensive burns, is a fact familiar to all surgeons; but the precise nature, comparative frequency, and immediate cause of the different lesions that may occur in these injuries, have not, it appears to me, been, as yet, ascertained with a proper degree of precision, no sufficiently extensive series of observations having been made on this subject. I have, therefore, collected together, and have arranged in a tabular form, for convenience of reference, all those *fatal* cases of burn that I have been able to find a sufficiently implicit account of in different periodicals and works, or that have fallen under my own observation; in all fifty in number. And it is by an analysis of the post-mortem appearances presented by this body of cases, (sufficiently large to avoid the deduction of false inferences,) that I purpose endeavouring to determine the points in question.

Dr. Cumin* was the first, in this country, who pointed out the occurrence of internal inflammation in cases of burn, to which, he says, his attention had been directed by the symptoms of high arterial action which are frequently witnessed in these injuries. He appears to have been anxious to controvert the then prevailing doctrines of Broussais, as he contends that the mucous membrane of the digestive organs is not affected in the extensive manner that the followers of that physician would lead us to believe, but

that, on the contrary, it suffers much less than membranes of the serous class: in this, however, he was in error, as has since been proved by Mr. Long, in a very interesting paper published in this journal.* Dupuytren, in his clinical lectures, shewed, likewise, the frequent complication of burns with internal lesions, such as congestions and inflammations of the organs contained in the head, chest, and abdomen, and related several cases illustrative of this. More recently, Mr. Wallace, of Dublin, has pointed out the same facts, and Mr. Long, in the paper already referred to, gives an analysis of a number of cases of burn, which he had collected from various sources or that had fallen under his own notice—the most extended series of cases of this description that had as yet been made. To this gentleman is also due the merit of having been the first to point out the occurrence of ulceration of the duodenum, as a consequence of these injuries; on which subject, Mr. Curling* has lately made some very interesting observations, detailing no less than ten cases in which that lesion was found.

In the analysis of the annexed table, I purpose averaging the cases contained therein under three heads: namely, those that died, 1st, during the period of congestion: 2nd, during the period of inflammation; and 3rd, during the period of suppuration.

1st. The period of congestion is limited to the first 48 hours; to the cases, indeed, in which death occurs before inflammatory action comes on or is fully established. This is the period that has been denominated, by Dupuytren, that of irritation; and he believed that, in this stage, death might arise from an excess of pain; that “too great a loss of sensibility might kill as well as too great loss of blood.” This opinion, however, is, I think, with deference to the very high authority from which it emanated, entirely unfounded. For when the injury is so extensive or severe as to give rise to such an excessive degree of pain as might be supposed to prove fatal, we shall invariably find that it, at the same time, occa-

* London Medical Gazette, Feb. 7, 1840.

† Medico-Chirurgical Transactions, Vol. 7, 2nd Series. I may here mention, that I have not included Mr. Curling's original cases in the annexed table, for as they were *selected*, they would necessarily falsify the result of its analysis.

* Edinburgh Med. and Surgical Journal, 1823.

A TABLE OF THE PATHOLOGICAL APPEARANCES OBSERVED IN FIFTY CASES OF BURN.

Name.	Age.	Sex.	Degree of Burn, &c.	Pathological Appearances.		When died.	Source whence obtained.
				Head.	Chest.	Abdomen.	
M. M. 1	56	Female	2d degree; upper part of trunk, fore-part of thighs, arms and neck.	Serous fluid in the arachnoid.	Reddish serum in both pleurae; lungs congested posteriorly	Bloody serum in peritoneum; spleen congested; stomach congested, especially about middle; ramiform and stratiform redness in small intestines, chiefly ileum.	University College Hospital.
L. T. 2	13	Ditto.	2d and 3d degrees: face, arms, neck, upper part of trunk.	Membranes and substance of the brain congested; fluid in lateral ventricles.	Lungs much congested posteriorly and inferiorly and hepatized; bronchi inflamed; surface of heart peculiarly congested.	Small intestines healthy, except ileum, which presented marks of ramiform congestion	Ditto.
A. R. 3	14	Ditto.	2d and 3d degrees: right arm, side of chest and back.	Not examined.	Both lungs hepatized with purulent infiltration and congestion of posterior lobes; bronchi contained much frothy mucus.	Abdominal viscera healthy, but blanched.	Ditto.
A. A. 4	5		2d and 3d degrees of left arm, hand and thighs.	Vessels of brain turgid; serum at base of skull.	Bloody serum in cavity of right pleura; lungs much congested.	Mucous membrane of stomach pale.	Ditto.
H. L. 5	8	Ditto.	Extensive scald of the chest.	Not examined.	Healthy.	An ulcer, about the size of a shilling, in the duodenum, just beyond the pylorus; the deficiency in the parietes of the gut supplied by the head of the pancreas; small intestine congested in points.	Ditto.
M. F. 6	9	Ditto.	3d and 4th degrees: front of neck, chest, and arms.	Serous fluid in arachnoid.	Lungs hepatized; bronchial mucous membrane much congested; bronchi contained purulent secretion.	Venae cavae greatly distended; patch of ulceration in the stomach nearly cicatrized.	Ditto.

Name.	Age.	Sex.	Degree of Burn, &c.	Head.	Pathological Appearances.		When died.	Source whence obtained.
					Chest.	Abdomen.		
M. G. 7	58	Female	3d and 4th degrees : back, arms, from umbilicus to knees.	Serous fluid in ventricles ; some congestion of membranes.	Healthy.	Extensive congestion of the whole of ilium and mucous coat, being of a deep crimson colour.	2d.	University College Hospital.
E. D. 8	9	Ditto.	3d degree : right side of neck, chest, trunk, right arm and leg.	Brain much congested ; sinuses gorged with blood ; bloody serum in ventricles.	Lungs congested.	Healthy.	3d.	Ditto.
E. G. 9	3	Ditto.	2d and 3d degree : upper part of chest, face, neck, left arm and hand, right hand slightly.	Healthy.	Parulent deposit in lower lobe of left lung.	Small intestines congested in various parts.	33d.	Ditto.
S. M. 10	8	Ditto.	3d and 4th degrees : upper part of chest, head, and neck.	Not examined.	Recent lymph in pleuræ, and hepatization of substance of both lungs.	Healthy.	3d.	Ditto.
F. W. 11	5	Ditto.	1st and 2d degrees : right side of face, neck, chest, and abdomen.	Healthy.	Lower and posterior part of right lung congested and softened ; bronchi contained much frothy mucus.	An ulcer in the duodenum about an inch below the pylorus, about the size of a fourpenny-piece, with elevated and thickened edges.	8th.	Ditto.
H. S. 12	4	Ditto.	3d and 4th degrees : arms, upper part of chest and neck.	Great turgescence of veins of surface of the brain ; opacity of arachnoid ; numerous red spots in interior ; great vascularity of plexus choroides.	Both lungs congested posteriorly ; bronchi contained frothy mucus.	Congestion of liver ; other viscera healthy.	6th.	Ditto.
J. H. 13	25	Ditto.	Whole of trunk, upper extremities, face, and right hip (by explosion of gas), 1st, 2d, and 3d degrees.	Surface and substance of brain much congested.	Lungs congested posteriorly, with a few spots of blood effused in their substance.	Portalsystem much congested, and lower part of small intestines.	4th.	Ditto.
M. A. S. 14	7	Ditto.	3d and 4th degrees : arms, chest, trunk, and thighs to below the knees.	Serum in lateral ventricles ; congestion of brain.	Lungs congested posteriorly.	Air in cavity of peritoneum ; intestines and kidneys congested.	1st.	Ditto.

O. R. 15	57	Female	3d and 4th degrees : head, neck, and upper extremities.	Not examined.	Splenization of posterior lobe of right lung and both lobes of left.	Healthy.	4th.	University College Hospital.
F. H. 16	21	Ditto.	3d and 4th degrees : chest, arms, abdomen.	Brain exsanguine ; effusion of serum under arachnoid, also in 3d and lateral ventricles.	Healthy, but exsanguine.	Healthy, but exsanguine.	17th.	Ditto.
J. S. 17	14	Male	2d and 3d degrees : right side of head and upper part of body.	Brain congested with dark blood ; spinal cord contains more fluid than natural.	Healthy.	Healthy.	1st.	Ditto.
E. S. 18	18	Female	Whole surface to 4th and 5th degrees.	Congestion of brain ; bloody fluid in ventricles and base of brain.	Lungs gorged with dark blood ; bronchiæ filled with mucus, and lining membrane engorged ; bloody serum in cavities of pleuræ, and in the pericardium.	Bloody serum in peritoneal cavity ; mucous membrane of stomach and small intestines congested, and blood extravasated into them ; lining membrane of uterus and vagina also congested with recently effused blood.	1st.	Ditto.
M. W. 19	3	Ditto.	Severe : upper part of abdomen, lower part of chest, arms, and occiput.	Healthy.	Healthy, with exception of pericardium, which contained fluid.	Lymph in peritoneum gluing together intestines ; purulent fluid in peritoneal cavity ; ulcer in duodenum about an inch from pyloric orifice ; coats of duodenum much thickened with yellow spots ; some blood effused about it, with masses of lymph.	7th.	Ditto.
J. B. 20	5	—	Arms, legs, back, epigastrium slightly.	Membrane of brain more vascular than natural, especially velum interpositum and pons varolii.	Lungs sound ; purple spot under pleuræ.	Villous coat of stomach : several spots and stripes, like sloughs, extending deep and black.	2d.	Mr. Swann Edin. Med. Journal, Vol. 19.
A. T. 21	30	Ditto.	Severe burn of head, neck, face, right arm, upper part of chest.	Serum effused between the membranes and into ventricles of brain.	Bronchi much inflamed and full of thick mucus.	Not mentioned.	4th.	Lancet 1823-24.
M. M.C. 22	40	Ditto.	Severe : face, right side of neck, thorax, right arm and shoulder, &c.	Serous effusion on brain ; bloody serum in basis crani.	Hepaticization of right lung.	Not mentioned.	14th.	Lancet, Vol. 15.

Name.	Age.	Sex.	Degree of Burn, &c.	Pathological Appearances.			When died.	Source whence obtained.
				Head.	Chest.	Abdomen.		
— 23	10	—	Face, neck and arms, severe in parts.	Not mentioned.	Lining membrane of trachea acutely inflamed, layer of coagulable lymph on the inner surface; bronchial passages much frothy fluid; lungs congested.	Not mentioned.	7th.	Mr. Thomas, Lancet, 1830.
— 24	8	Female	Severe and extensive.	Sinuses and vessels of dura mater gorged with blood, as well as those of pia mater and brain; reddish serum in lateral ventricles and at base of cranium.	Lungs congested; right ventricles of heart contained much black blood.	Mucous membrane of stomach and intestines congested.	1st.	Mr. Wallace.
M. Y. 25	8	Ditto.	Severe: neck, left cheek, arm, breast and abdomen.	Not examined.	Adhesions in pleuræ; lungs healthy.	Healthy.	35th	Mr. Cumin, Edin Med. Journal, Vol. 19.
J. N. 26	4	Ditto.	Severe: left arm and thigh, hypogastrium and chin.	Pia mater morbidly vascular, with patches of extravasated blood; velum interpositum and plexus choroides congested; 3i. bloody serum at base of skull.	Lungs healthy; 3ij. of serous fluid in pleuræ; a little in pericardium.	Peritoneal coat of intestines inflamed; 3ij. of serous fluid effused.	5th.	Ditto.
M. S. 27	7	Ditto.	Severe: abdomen, left side of trunk, left cheek, and upper part of both thighs.	Not mentioned.	Not mentioned.	Omentum and peritoneum very vascular, with effused lymph; intussusception of ilium; mucous membrane of intestines exhibited strong marks of inflammation with gangrenous spots.	3d.	Ditto.
C. M. 28	7½	Ditto.	2d and 3d degrees: face, belly, inner sides of both arms,	Healthy.	Red patches in right pleuræ; mucous membrane of bronchi very vascular.	Peritoneal and mucous coats of small intestines morbidly vascular, with several gan-	9th.	Ditto.

L. M. 29	27	Female	Severe: whole surface.	Not mentioned.	Lungs congested; serum in cavities of pleura.	Serum in peritoneal sac, which, as well as intestinal mucous membrane, was highly vascular.	2d.	Mr. Cumin, Edin. Med. Journal. Vol. 19. Wallace.
— 30	40	Ditto.	Severe: face, neck, right side of chest and shoulder.	Serum effused on hemisphere of brain and at base of brain.	Hepaticization (?) of right lung.	Not mentioned.	1st.	Wallace.
J. L. 31	5	—	Severe: abdomen.	Not examined.	Not examined.	Healthy.	6th.	Mr. Long.
J. L. 32	28	Female	Severe: arm, chest, and nates.	Not mentioned.	Not mentioned.	Ulcer in duodenum.	8th.	Ditto.
H. B. 33	14	Ditto.	2d degree: nates, back, and both arms.	Not mentioned.	Not mentioned.	Ulcer in duodenum, with marks of peritonitis; mucous membrane of small intestine healthy.	12th.	Ditto.
— 34	—	—	Burn of upper part of body; tetanus.	Brain and its membranes dry.	Not mentioned.	Not mentioned.	18th.	Ditto.
— 35	50	Female	Right side of chest, arm, neck, and face.	Not mentioned.	Seven ounces of turbid serum in each side of the chest; lungs congested; bronchial mucous membrane inflamed; Pleure and pericardium also dry; congestion of the lungs; redness of mucous membrane of bronchi.	Not mentioned.	24th.	Mr. Arnott.
L. 36	3	Male	5th and 6th degrees of whole surface.	Membranes of brain preternaturally dry; brain congested and ventricles contain a bloody serosity.	Pleure and pericardium also dry; congestion of the lungs; redness of mucous membrane of bronchi.	Peritoneum dry; stomach, intestines, and liver congested.	1st.	Dupuytren
— 37	2 7	Female	1st to 5th degree of whole surface.	Pia mater strongly injected; arachnoid dry, the cerebral substance firm and dry.	Lungs gorged with blood; bronchi contained much mucosity; their membrane strongly injected.	The pyloric extremity of the stomach presents a number of small ulcers with a grayish base; the ilium is of a dark red in the whole of its extent; the liver and spleen are engorged.	2d.	Ditto.
A. F. 38	40	Ditto.	1st to 4th degrees of left side of face, left elbow and side of chest, also of right hand.	Pia mater and brain slightly congested in a punctiform manner.	Not mentioned.	Gastro-intestinal mucous membrane inflamed.	4th.	Ditto.

Name.	Age.	Sex.	Degree of Burn, &c.	Head.	Pathological Appearances.		When died.	Source whence obtained.
					Chest.	Abdomen.		
J. R. 39	33	Male	Severe: of thighs and legs; tetanus.	Veins of cranium distended with blood; arachnoid is opalescent; grey substance of the brain is of a uniform rose colour; the subjacent white substance is also highly injected; the ventricles contain but a very small quantity of serum.	Lungs slightly engorged posteriorly.	Some redness, to the extent of two square inches, at the great curvature of the stomach; the ilium is of a red colour; also a few spots of redness in the ascending colon.	13th.	Dupuytren.
M. 40	63	Female	1st to 3d degree: on nates and right heel.	Ventricles of brain contain a large quantity of reddish serum; the meninges, especially the arachnoid, are inflamed.	Right lung hepatized at the base; the bronchi are injected and filled with mucosities; the right pleuræ contains a slight effusion.	Mucous membrane of the stomach is very red.	11th.	Ditto.
— 41	17	Ditto.	1st to 4th degree: scald of both feet.	Congestion of the membranes and substance of the brain.	Healthy.	Healthy.	7th.	Ditto.
— 42	Ages varied from 3½ to 22 years	Ditto.	Not mentioned.	Gorged state of the sinuses of dura mater.	Healthy.	Healthy.	Period of death varied from 4 to 13 hours.	Mr. Long.
— 43		Ditto.	Ditto.	Brain congested.	Not examined.	Not examined.		
— 44		Ditto.	Ditto.	Brain congested; bloody serum in ventricles.	Lungs congested; 5 ounces of turbid serum in right pleuræ.	Abdominal viscera congested.		
— 45				Brain congested; bloody serum in ventricles and at base of cranium.	Lungs congested.	Jejunum and ilium were studded with red spots and inflamed.		
L. C. 46	9	Ditto.	1st to 3d degree: arms, upper part of chest, shoulders and neck.	Effusion into arachnoid and ventricles; congestion of meninges and of brain, more particularly the cineritious substance.	Right lung somewhat congested posteriorly; not softened or friable; bronchial mucous membrane reddened with frothy mucus; each pleura contained about 1½ ounce of bloody serum; pericardium contained some fluid.	An ulcer, about the size of a shilling, was found in the duodenum immediately beyond the pylorus, its margins were sharp, but the mucous membrane, at most, was slightly thickened; lining membrane of duodenum, jejunum, and ilium strongly injected; some fluid in the	4th day.	University College Hospital.

N.	Sex	3d, 4th, and 5th degree of face and upper part of the body.	Not mentioned.	Not mentioned.	22d.	Ditto.
47	Female				Inflammation of the mucous membrane of the duodenum, of the upper part of the ilium, and in patches throughout the small intestines.	Ditto.
J. C. 48	Male	1st to 4th degree of whole surface.	Effusion of serum in ventricles of brain and under arachnoid; congestion of cerebral substance.	Healthy.	Serum in the cavity of the peritoneum.	Ditto.
M. G. 49	Female	1st to 4th degree of arms, neck, chest and trunk.	Cerebral substance much congested.	Lungs much congested; lining membrane of bronchi congested; covered with frothy fluid.	Mucous membrane of the stomach and intestines congested with effusion of bloody serum into the peritoneum.	Ditto.
J. H. 50	Ditto.	1st to 3d degree of upper part of body, arms, trunk, legs, &c.	Bloody serum in ventricles of brain and under arachnoid.	Not mentioned.	Mucous membrane of intestines congested with bloody serum in peritoneum.	Ditto.

sions such structural changes as are fully sufficient of themselves to account for the fatal termination, without having recourse to so hypothetical a notion as death from excess of pain or from loss of sensibility.

On examining the table it will be found, that the number of cases contained in this class amounts to 16. Of these, the brain and its membranes were found congested, with more or less serous effusion into the ventricles or arachnoid, in 15 cases.

Contents of cranium not examined in . . . 1
 The lungs were congested, with more or less redness of the bronchial membrane, and effusion into the pleura, in . . . 8
 The lungs were hepatized in . . . 1
 State of the thoracic viscera not mentioned in . . . 2
 Thoracic viscera not healthy in . . . 5
 The abdominal organs were healthy in . . . 2
 ————— not mentioned in . . . 2
 ————— congested more particularly in the mucous membrane of stomach and ilium in . . . 12

In one of these last cases there was air in the peritoneum; in four others, there was serum effused, and in one that membrane was dry.

Thus it will be seen that, in all the patients who died during the period of congestion (irritation of Dupuytren), there was found sufficient structural lesions, more particularly of the brain and its membranes, to account for death, without attributing that event to the operation of so obscure a cause as excess of pain or too great a loss of sensibility.

2nd. As the cases contained in the second class, the period of inflammatory re-action and inflammation, extend over a longer space of time, from the 2nd day to the end of the second week, they are necessarily more numerous than those of the first class, being 25 in number. Of these,

The brain and its membranes were not mentioned in 8 cases. Of the remaining 17:

There was congestion or evidences of inflammation, with more or less effusion of serous fluid, principally of a bloody character, in . . . 11
 There was serous effusion only in . . . 3
 A healthy condition in . . . 3

The state of the thoracic viscera is

here mentioned in six cases. Of the remaining 19 :

There was congestion (probably in many instances inflammatory) in the lungs, with more or less effusion of serum or lymph in the pleuræ, with redness of bronchial mucous membrane, in . . . 10
Lungs hepatized in . . . 5
Lungs, &c. healthy in . . . 4

The state of the abdominal organs not mentioned in 3 cases : of the remaining 22

There was increased vascularity, chiefly of the mucous membrane of the small intestines, with, in some cases, evidences of peritonitis, in . . . 11
Ulcers in the duodenum in . . . 6
Abdominal organs healthy in . . . 5

Thus it will be seen that the cases in this class differ, in some very important respects, from those in the preceding one. The cerebral lesions are found not to be quite so frequent, but, when they do occur, they present more unequivocal evidences of inflammatory action. The lungs are rather more frequently affected, and show decided marks of pneumonia or of intense bronchitis, as manifested by the former disease having, in several cases, advanced to hepatization, and by the inflamed state of the bronchial mucous membrane, which is usually coated with a thick frothy mucus. Appearances indicative of pleuritis are also by no means uncommon in those cases that prove fatal during this period. The most marked characteristics of it, however, are to be found in the lesions of the abdominal organs, which, although not so frequent as in the stage of congestion, are unquestionably of a far graver nature ; that very remarkable and serious sequela of burns, perforating ulceration of the duodenum, being found in no less than 6 of the 22 cases, or one in every 3·6 deaths that occur during this period. I may here state that in one instance, Case 46, ulceration of this portion of the intestinal canal was found in a patient who died on the 4th day after the infliction of the injury ; the only case on record, I believe, in which this lesion has been noticed at so early a period ; Mr. Curling not mentioning, in his collection of cases, any that occurred before the 7th day. Besides the lesion just

mentioned, there are abundant evidences of the existence of peritonitis, and of congestion, very probably inflammatory, of the intestinal mucous membrane of those who die during this period.

3rd. The cases contained in the third class, those in which death occurred during the period of suppuration, are 9 in number ; and these we shall also find to be distinguished by several interesting peculiarities.

The brain and its membranes were not examined in 4 cases : of the remaining 5,

There was effusion with congestion in . . . 1
Effusion without congestion in . . . 2
Preternatural dryness in . . . 1
Healthy condition in . . . 1

State of the thoracic viscera not mentioned in two cases : of the remaining 7

There was congestion of the lungs, with effusion into the pleura, in 2
Purulent infiltration of the lungs in 2
Hepatization of the lungs in . . . 1
Recent lymph effused in pleuræ in 1
Lungs healthy, but exsanguine, in 1

The condition of the abdominal viscera not mentioned in 2 cases. Of the remaining 7,

Inflammation of duodenum and congestion of ilium in . . . 1
Congestion of ilium in . . . 1
Cicatrized ulcer in stomach, otherwise healthy, in . . . 1
Healthy in . . . 4

Thus it will be seen that in the 3rd class of cases, lesions of the lungs are the most common ; of the brain least ; whilst those of its abdominal viscera are but of unfrequent occurrence.

Of the six cases in which morbid changes were found in the lungs or pleuræ, one died on the 24th day, and the remaining five, between the 30th and 39th days. The pneumonia will, at this period, be found to be in a more advanced stage, having, out of the five cases in which it occurred, gone on to purulent infiltration in two, and to hepatization in one. There is one case of peculiar interest in this class : viz. that in which a recently cicatrized ulcer was found in the stomach ; which lesion must, like the duodenal ulcers, have occurred during the second period ; the patient dying in the third, of pneumonia and bronchitis.

Thus then it will be found, that of the cases that occurred during the 1st period:

The cerebral organs were diseased in	15	out of 15	or 100	per cent.
The abdominal organs in	12	"	14	" 85·7 "
The thoracic viscera in	9	"	14	" 64·2 "

In the second period, the comparative ratio is, as nearly as possible, the same; if anything, the cerebral organs are a little more frequently affected:

The brain and its membranes being diseased in	14	out of 17	or 82·3	per cent.
The thoracic viscera in	15	"	19	" 78·9 "
The abdominal organs in	17	"	22	" 77·2 "

In the third period:

The thoracic viscera were diseased in	6	out of 7	or 85·7	per cent.
The cerebral organs in	4	"	5	" 80 "
The abdominal viscera in	2	"	6	" 33·3 "

On taking the total amount of the whole of the cases, and reducing it to decimals, it will be found that:

The cerebral organs were diseased in	33	out of 37	or 89·1	per cent.
The thoracic viscera in	30	"	40	" 75 "
The abdominal viscera	31	"	42	" 73·8 "

The period at which death may be expected to occur varies, necessarily very considerably, according to the nature of the individual case, the extent or severity of the burn, and the age or constitution of the patient. On taking, however, the aggregate of the 50 cases, without reference to these modifying circumstances, we shall find that 33, or 66 per cent. prove fatal during the first week. Of these 33, no less than 27 died during the first four days, and the remaining 6 on the three following days. Of the 17 that were left:

8	died during the 2nd week.
2	" 3rd do.

2	died during the 4th week.
4	" 5th do.
1	" 6th do.

Thus it will be seen that the greatest number of deaths occur during the first few days, in the stage of congestion, or whilst that condition is passing into an inflammatory one. After this period the mortality diminishes progressively until the 5th week, the period of suppuration, when the chief dangers to be apprehended arise from exhaustion, purulent infiltration of the lungs, and inflammation of those organs.

[To be continued.]

A TABULAR VIEW OF THE TREATMENT OF UTERINE HÆMORRHAGES.

To the Editor of the Medical Gazette.

SIR,

THE accompanying tabular arrangement of the treatment of uterine hæ-

morrhages is almost a literal translation of the *Tableau Synoptique* of M. Paul Dubois, of Paris, on the same subject. If you consider it of sufficient importance to deserve a place in the pages of your excellent journal, it is perfectly at your service.—I am, sir,

Your obedient servant,
WILLIAM CAMPS, M.D. Edin.

50, Green Street, Grosvenor Square,
Dec. 28, 1842.

HÆMORRHAGE BEFORE PARTURITION.

A. *Slight Hæmorrhage*.—Horizontal position; perfect repose; cool air; cool acidulous fluids; low diet; bleeding if there be symptoms of plethora. The bladder and rectum to be emptied.

B. *Severe Hæmorrhage*.—The same treatment as in A., except the bleeding (1.) At first cold applications; then the ergot of rye, in doses of 12 grains, repeated three times, at intervals of ten minutes. And if these means are insufficient to arrest the hæmorrhage, plug the vagina, or in some especial cases rupture the membranes (2.)

HÆMORRHAGE DURING PARTURITION.

Slight Hæmorrhage.

Os uteri not dilated, and not dilatable.

Membranes entire:—The same means as in A., except the bleeding, which is not indicated unless the symptoms of plethora are exceedingly pronounced.

Membranes ruptured:—As above.

Os uteri dilated.

Membranes entire;—The same means as in A.; then wait, or rupture the membranes (3.)

Membranes ruptured:—The same means as in A., and wait; if the pains are feeble or slow, give the ergot of rye (4.)

Severe Hæmorrhage.

Os uteri not dilated, and not dilatable.

Membranes entire:—The same treatment as in A., except the bleeding; then the refrigerants, as cold applications. In case these fail, and if the pains are feeble, the ergot of rye; then rupture the membranes. Lastly, if the state of the os uteri will not allow of turning, plug the vagina.

Membranes ruptured:—The same treatment as in A.; refrigerants; ergot of rye if the pains be slow or feeble. In case these fail, compression of the uterus; plug the vagina; introduce the hand, and deliver by turning (5.)

Os uteri dilated, or dilatable.

Membranes entire:—Rupture the membranes (6.); and if this does not succeed, introduce the hand and turn, or apply the forceps.

Membranes ruptured:—Turning, if the head of the child has not descended into the cavity of the pelvis (7.) Apply the forceps if the head of the child have already descended into the cavity of the pelvis. Simple extraction if the child present by breech, knees, or feet.

(1.) *The ergot of rye* is employed here as hæmostatic; in the case supposed, there is not, at present, uterine pains; it is not probable that the employment of the ergot of rye should produce them, for hitherto this remedy appears to possess the property of increasing the uterine contractions only when they occur spontaneously, and not that of exciting them, when they do not already exist.

(2.) *The plug* will, in the first place, arrest the hæmorrhage; then, by the retention of the blood, and by its presence, it will irritate the *neck* and *orifice* of the uterus, and it will induce the expulsive contractions. These will dilate the *os uteri*, and this dilatation will allow either the rupture of the membranes, or the termination of the accouchement.

(3.) This rupture can have no inconvenience; it is a means of preventing the increase of the hæmorrhage. We

may always dispense with it, and rest satisfied with waiting until the progress of the labour shall have arrested the hæmorrhage: the last method is after all perhaps the most prudent. A little *more* or a little *less* tendency to the increase of the hæmorrhage should determine the choice of the one or of the other method.

1st. *Wait*, if the hæmorrhage do not increase in any degree, and still more so if it diminish.

2d. *Rupture the membranes* if there be any tendency to increase of the hæmorrhage; this rupture will be profitably preceded or followed by the administration of some doses of the ergot of rye, if the uterine pains are feeble or slow.

(4.) It may be asked, if it would not be proper to terminate the accouchement in this case, since the parts concerned seem disposed to this termination. We think that if the fœtus presents in

the usual manner, it is better not to be officious with the application of the *forceps* or *turning*, because the employment of these means would be more severe than the *slight* hæmorrhage which appears to demand their use.

(5.) This case is one of great delicacy; the application of the plug here requires great caution; for when the vagina is closed up, the blood may possibly accumulate in the cavity of the uterus, so that the patient may be lost, although no blood make its appearance externally; and the danger will be so much the greater, as the uterus shall have been more developed before the rupture of the membranes, and as the uterine contractions shall be more feeble. The application of the plug should be preferred, to the termination of the accouchement, only when the uterine contractions are sufficiently strong, and when, at the rupture of the membranes, only a very small quantity of the liquor amnii shall escape from the uterus. Again, the application of the plug demands great care of and attention to the patient, and should be followed by the application of a bandage round the abdomen sufficiently tight to resist the enlargement of the uterus. On the contrary, when the uterine contractions are feeble, when a large quantity of the liquor amnii shall have escaped at the moment of the rupture of the membranes, it will be necessary to overcome the resistance offered by the state of the os uteri, and terminate the accouchement by *turning*.

(6.) In this case we may be surprised at the advice to *rupture the membranes*, and *wait*, before adopting any other method, according as the retraction of the uterus may have, or may not have, arrested the hæmorrhage; it seems so important, both to the mother and to the infant, that the birth of the latter should be the result of the uterine contractions alone, rather than of manual interference, very often difficult, that it is very desirable to take the chance of a spontaneous accouchement at all times when there is the probability of obtaining it. It is to be understood that this recommendation to *wait*, is only admissible in case the uterine contractions are neither feeble nor slow.

(7.) We may certainly in this case have recourse to the *forceps*; but the employment of this instrument, when

the head of the child is above the orifice, and not engaged in the cavity of the pelvis, frequently offers sufficient difficulty to render the delivery by turning preferable.

It will be seen that the indications are based on the slightness or severity of the hæmorrhage, and not on the circumstance of the insertion or non-insertion of the placenta on the neck of the uterus; not that this circumstance is a matter of indifference, for almost always the hæmorrhage produced by the detachment of the placenta inserted over the orifice of the uterus, is one of a severe and serious character, and demands immediately the employment of the means indicated for severe hæmorrhages. Sometimes the insertion of the placenta on the neck of the uterus occasions only a slight hæmorrhage: the author does not consider, then, as do the greater part of accoucheurs, that the insertion of the placenta on the neck of the uterus requires, in every case, the speedy termination of the accouchement, yet it may modify the employment of the means above indicated. For instance, if in a case of severe hæmorrhage the placenta covers entirely the os uteri, we cannot have recourse to the simple rupture of the membranes, as we could if such were not the case. If the os uteri be neither sufficiently *dilated*, or sufficiently *dilatable*, to allow the introduction of the hand, it will be necessary to employ the plug; if, on the contrary, it be sufficiently *dilated*, or sufficiently *dilatable*, it will be necessary to detach one of the sides of the placenta, in order to make a passage into the cavity of the uterus, and deliver by turning; but if a portion only of the placenta be inserted on the os uteri, leaving exposed a part of the membranes, we may proceed as if the placenta were not inserted at the os uteri. In no case does it seem advisable to make a passage through the placenta, as some accoucheurs have recommended. Lastly, if the placenta, pushed by the head or the breech of the fœtus, be entirely, or almost entirely, detached, and has passed beyond the orifice of the uterus, we must extract it before the fœtus, for this organ is useless in these circumstances, and its presence in the vagina is an obstacle to the free exercise of the hand, or of instruments.

CASE OF POISONING BY CORROSIVE SUBLIMATE,

By HENRY STANHOPE ILLINGWORTH,
M. R. C. S.

(For the London Medical Gazette.)

W. B., ætat., 30, immensely fat and in robust health, was found dead on the 4th of December, 1842, at half-past seven A. M. He was lying on his right side on the edge of the bed, and had vomited some nearly digested food streaked with blood, and mixed with frothy mucus. On a shelf within reach was a drinking horn, containing upwards of three drachms of corrosive sublimate.* An inquest was held, and on examination of the body it was ascertained that he had died from this poison.

The interest in this case arises from the rapidity with which death ensued.

Of all the irritant poisons, corrosive sublimate is that which causes death most quickly. In the interesting experiments of Sir B. Brodie,† rabbits and cats were destroyed by it in from five to twenty-five minutes, and the inner coats of the stomach were found gray, brittle, and pulpy. Larger animals were killed within an hour.‡ In Gaspard's experiments,§ in which corrosive sublimate was injected into the blood, death was sometimes produced in a few seconds. Christison states the ordinary duration of fatal cases in the human frame to be from 24 to 36 hours.|| The shortest case on record is related by Dr. Bigsby,¶ where death took place in two hours and a half; the next most rapid instance was fatal in eleven hours.**

The deceased was last seen alive at 11½ P. M., and was discovered at 7½ A. M. on the following morning. Eight hours had therefore intervened. *The face as well as the extremities were cold.* When it is remembered that this man, who was *exceedingly fat* and in *vigorous health*, and whose animal heat was therefore at the ordinary standard,

went to bed well eight hours previously, it may be fairly presumed that he had been dead five or six hours; for it is seldom found, even in emaciated subjects who have been ill for some time, that the cooling of the body takes place more expeditiously.

It is evident that this is the second shortest case on record, and there is much probability that its duration was even briefer than in that of Dr. Bigsby.

The question which naturally suggests itself, is, whether it was almost instantaneously fatal from suffocation; the context will, I believe, satisfactorily answer this:—

Vomiting of nearly digested food, mixed with mucus, and streaked with blood, but apparently containing no bile, had occurred, as likewise purging of a dark fœtid fluid and blood; the features were much swollen; the stomach was somewhat contracted; the inner coat appeared corrugated, *pulpy*, easily broken down, and of a grayish slate colour, and contained about half a pint of thick fluid of the same appearance; the muscular coat was wrinkled, but on stretching the stomach regained its usual character; there was no inflammation, or sign of attempted reaction.

That death did not immediately follow, may be inferred: *a.* from the vomiting mixed with blood.

b. From the purging of blood and fœtid matter.

c. From the interior of the stomach being of a grayish colour; for if the poison had acted on it *after* death, the compound formed by the union of the corrosive sublimate and albumen, &c. of the mucous membrane would have been white.*

d. From the swelling of the features

e. From the horn which contained the poison having been replaced on the shelf: from the basin being at the side of the bed, which must have been fetched from the adjoining room *after* vomiting had commenced, as he could not have been previously acquainted with the symptoms produced by it;† and from his afterwards getting into bed, all which acts must have occupied an appreciable time, and could not have

* It appears from the horn being wet, that water had been poured in, and part of the contents drunk during their suspension in the liquid, by agitation.

† Philosophical Transactions, 1812.

‡ Ibid.

§ Journal de Physiologie, vol. 1.

|| On Poisons, p. 374.

¶ Ibid.

** Ibid.

* Pereira, Med. Gaz. vol. 18, p. 470; and Christison, p. 407.

† He was of weak intellect, and from his situation as a servant, it is not to be presumed that he knew more about the substance than that it was a violent poison.

been accomplished during the process of suffocation.

That death was not very remote from the suicidal act may be premised :

a. From the stomach having but partially emptied itself, which would not have been the fact had vomiting been prolonged.

b. And if prolonged in all probability bile would have been detected in the stomach.

c. From the cold state of the body.

d. From no red lines or patches existing in the *sulci* between the corrugated fragments of the mucous membrane, time only having been given for the destruction of parts, not for the commencement of their reparation.*

The quantity of poison swallowed must have been very great,† for after having destroyed the whole of the inner membrane of the throat, œsophagus, stomach, and duodenum, and having combined with the contents of the stomach, which were considerable (for he had lately eaten a supper of roast mutton), sufficient was left in its undecomposed state to be readily detected as the *bi-chloride of mercury*.‡

How soon was death produced ?

1, Arlington Street,
Jan. 6, 1843.

ANALYSES AND NOTICES OF BOOKS

“L'Auteur se tue à allonger ce que le lecteur se tue à abrégé.”—D'ALEMBERT.

On the Different Forms of Insanity in relation to Jurisprudence. By J. L. PRICHARD, M.D. F.R.S. &c.

THE object of this work is so correctly and fully stated in the advertisement prefixed to the volume, that we shall present it to our readers in the words of the author :—“Its design is to convey to persons who either regularly or accidentally are engaged in affairs re-

ferring to lunatics, or in trials in which there is question of the sanity or insanity of individuals, such information respecting the different kinds and modifications of mental unsoundness as it may be required by them to possess, in order that they may be enabled to determine on verdicts, or to direct and instruct juries to that effect.” We cannot pass a more favourable judgment on the work than by saying, that the design which the author proposed to himself he has admirably accomplished. We must not, however, offer a more general eulogy; we must satisfy the demands of our readers, by giving them a brief analysis of the work, and pointing some of its parts, which are of more prominent interest or of superior excellence.

The work is divided into twenty sections. The two first may be considered as introductory, giving an account of the “different kinds of mental unsoundness, as hitherto understood by English jurists,” and on “the nature of insanity, according to the prevailing opinion of English lawyers.” The author gives a learned historical detail of the various opinions that have been entertained on these subjects, and traces the modifications which they have experienced at different periods and in different countries. It is a circumstance worthy of notice, that while the English law recognises only two classes of insane persons, idiots and lunatics, the French admit of three species of mental disease—*madness*, *fatuity*, and *imbecility*. In the second section, on the nature of insanity, the question is discussed, how far the opinion which has been generally assumed by the English lawyers is correct, that the belief of some unreal fact, or some kind of delirium, is essential to the existence of insanity. This doctrine received the high sanction of Locke, and has been generally adopted by the most eminent legal authorities, as that of Erskine and Nicholl. As Dr. Prichard remarks, this opinion resolves itself into the doctrine of what has been termed *partial insanity*, where a man is supposed to be “mad upon one point, and sane in every other particular;” as our author judiciously remarks, “a state in itself most incredible.” A main object of the work, and one which, we conceive, is very satisfactorily established, is to prove “that mental derangement, in

* Brodie, vide Christison, p. 403. In the instance related by Dr. Bigsby, which terminated as before stated in two hours and a half, the stomach was found scarlet red or deep rose-red; showing that inflammation had set in.—*Ibid*.

† Habnemann states that four grains of corrosive sublimate will kill an adult within twenty-four hours; but there is reason to think that a much smaller dose would, under certain circumstances, prove fatal.—*Apjohn, Cyclop. Pract. Med.* vol. iv., p. 207.

‡ By Christison's plan of agitating the mixed contents of the stomach with sulphuric æther, filtering, evaporating, and applying the appropriate tests.

almost every case, not only involves a disordered exercise of the intellectual faculties, but extends even farther than the understanding, and implicates more remarkably the moral affections, the temper, the feelings, and propensities; that it affects, in reality, the moral character even more decidedly than the understanding."

The author, in the five next sections, enters more particularly into the description of those forms of the disease which he considers as sufficiently characterised to admit of specific denominations; these are mania, or raving madness, moral insanity, monomania, melancholia, and instinctive madness. For the distinct conception and designation of the second and fifth of these forms of the disease, we are mainly indebted to the sagacity of Dr. Prichard. The sixth section is particularly interesting; it is on "the consequences which result from admitting the existence of moral insanity as a form of mental unsoundness,—of eccentricity,—of the question which gives law to determine in these cases." On the last of these points we have the very important remark, that "persons may fall into a state that deprives them of the power and inclination to govern their own conduct with propriety, and in consistency with their own habitual principles of action, and that, though the effect of disease, without displaying that phenomenon which was heretofore considered as essential to madness, and the sole criterion of its existence." Our readers will be aware, that the phenomenon here referred to is the belief of some unreal fact, or the existence of some delusive idea. The sections on monomania and melancholy are highly interesting and instructive; but being less novel, we must pass on to the seventh section, which treats of instinctive madness. The author candidly admits that his opinion on this point "is in opposition not only to common prejudice, but to all opinions *a priori* that any person would be likely to deduce from the philosophy of the human mind. We conceive, however, that he clearly establishes his peculiar views respecting it, and decidedly proves the correctness of his position, that "in this disorder the will is occasionally under the influence of an impulse, which suddenly drives the person affected to the perpetration of

acts of the most revolting kind, to the commission of which he has no motive." Dr. Prichard says we are indebted to Pinel for the recognition of this form of insanity; and he takes the opportunity of paying a high but justly merited encomium on the practice of this talented physician, which is no less conducive to the present comfort than to the ultimate recovery of the patient. The three following sections are devoted to an account of three forms or species of instinctive madness, propensity to suicide, pyromania, or an insane impulse to love, and kleptomania, or an insane impulse to theft; and in the fifteenth section we have some important results, or some of those peculiarities of conduct which are generally regarded as criminal, but which the author conceives are more correctly to be regarded as the result or effect of insanity.

The sixteenth section is peculiarly interesting, and may, indeed, be regarded as a general summary of the doctrines and conclusions deduced from all the previous facts and observations. It is entitled, "How far, and in what sense, insane persons are irresponsible for crimes, and incapable of civil acts." Both the English and the French law, and, we may add, the law of common sense and of justice, coincide in the principle that "madness, properly so termed, obviously absolves from all guilt in criminal cases." The difficulty is to draw the line of distinction between this unequivocal state of insanity, and those degrees or shades of disease which are less decided and less general, but still where the patient cannot be considered as a moral agent. This difficulty has long been felt and expressed, more especially as applicable to the case of monomania; and there has been considerable fluctuation of opinion and indecision even in the highest quarters. Some of these opinions our author refers to and comments upon, and he particularly notices those of Hoffbauer and of Georget, writers who have devoted much of their attention to the consideration of this subject, and who are deservedly regarded as of high authority. The great difficulty in all these cases is, to decide upon the degree of eccentricity or perversion, which, it may be fairly concluded, will lead the patient to commit actions which may be injurious to himself or to those

about him; and after all that can be done in the establishment of general principles and rules, much must be left to the good sense and good feeling of those who are to decide in each particular case. But in making this remark, we must not be considered as in any respect undervaluing the reasoning and the conclusions of our author; and in proof of this we shall quote some of the observations with which the section terminates:—"Moral insanity, meaning a perversion of the character and disposition, resulting from disease, is a full and sufficient ground for suspending the exercise of civil rights; and this, whether it is accompanied by monomaniacal illusion, or existing before, and without any discoverable lesion of the understanding." We have noticed in various parts of this work, that the humanity and benevolent spirit of the writer is no less conspicuous than his strong sense and extensive information; in illustration of which sentiment, we shall transcribe the concluding sentence of this section. Speaking of the subjects of what he has denominated instinctive insanity, he says, "so soon as it is proved to exist, there can be no doubt that the person who is visited by this deplorable misfortune ought to be effectually separated from society, to prevent mischief to himself and others. Whether he ought in any case to undergo other punishment than this, is a question which I do not feel disposed to discuss. The calamity with which we know them to be afflicted is so great, that humanity forbids our entertaining the thought of adding to it. Perhaps all that we ought to aim at in such a case is, to secure the community against the evils to which it may be exposed."

The eighteenth section treats of the important topics of "insanity with lucid intervals—ecstatic madness—legal relations of their condition." It is no less valuable than many of those which have preceded it; but we feel that we must bring our remarks to a conclusion. We have said enough, we trust, to prove our opinion of the value of the work of Dr. Prichard, and shall only add, that we have very seldom, if ever, perused a volume which, in the same compass, contains so much important information.

Mémoire sur le Glaucome. Par le Dr. JULES SICHEL. 8vo. pp. 260. Bruxelles, 1842.

THIS monograph on Glaucoma, by Dr. Sichel, appeared in the 5th, 6th, and 7th volumes of the "*Annales d'Oculistique*," and is now presented to us as a separate work. It contains an elaborate history of the opinions entertained on glaucoma, from the time of Hippocrates down to the present day, and a detailed account of Dr. Sichel's own views of the subject. In thirty propositions at the end of the work, the whole of his conclusions are summed up.

From the first of these propositions, we learn that Dr. Sichel is of opinion that "Glaucoma is a disorganization of the choroid consequent to inflammation;" a dogma which Dr. Sichel has not proven to our satisfaction, and which we believe to be unfounded. That glaucoma often becomes complicated with inflammation, acute or chronic, and that vision is rarely, if ever, totally destroyed by it, without inflammation participating in the production of this effect, we do not mean to deny; but that the greenish appearance of the humours, and the diminution of vision, which, in many cases, from the whole symptoms, objective and subjective, of the disease, are dependent on choroiditis, we believe to be an error.

The following statement in the 26th proposition startles us not a little. "It was only in 1831, that M. Constatt and I made an important step towards the knowledge of the nature of glaucoma, by proving that the loss of colour of the choroid, and the yellow tinge of the vitreous body, and not a green opacity of the latter, are the true causes of the apparent greenish opacity of the bottom of the eye in this disease. In 1837 I demonstrated that the crystalline, become yellow, had more influence in the production of this greenish tint than the vitreous body." From the frequent references throughout Dr. Sichel's volume to the opinions of Dr. Mackenzie on glaucoma, we fear it is impossible to absolve Dr. Sichel from the accusation of endeavouring here to deck himself in plumes borrowed from another. Dr. Mackenzie's first paper on glaucoma, in the *Glasgow Medical Journal* for August 1830, an abstract of which we published at the time,

contains the whole of the fine discoveries, claimed in the 26th proposition, by Dr. Sichel, for himself and M. Constatt. The following quotations from Dr. Mackenzie's *Practical Treatise on the Diseases of the Eye*, first edition, also published in 1830, contain the results of his dissections of glaucomatous eyes, and sufficiently shew the injustice of Dr. Sichel's claim to originality, in his 26th proposition, above referred to.

"I had long felt anxious," says Dr. Mackenzie, "to ascertain, by dissection, the changes which the eye undergoes in glaucoma; and being favoured, some time ago, with several eyes in this state, I carefully dissected them." "The following are the particulars which I observed:—

"1. The choroid coat, and especially the portion of it in contact with the retina, of a light brown colour, without any appearance of pigmentum nigrum.

"2. The vitreous humour in a fluid state; perfectly pellucid; colourless, or slightly yellow. No trace of hyaloid membrane.

"3. The lens of a yellow or amber colour, especially towards its centre; its consistence firm, and its transparency perfect, or nearly so.

"4. In the retina, no trace of limbus luteus, or foramen centrale."

"It is not probable that the light, reflected merely from a choroid deprived of its pigmentum nigrum, and, in its reflection, passing through media perfectly colourless and transparent, would produce the greenish appearance which is so characteristic of glaucoma. The media, however, through which the reflected light passes, before it makes its exit from the eye, are not colourless. The dissolved vitreous humour is generally somewhat yellowish, while the lens, from old age, is distinctly yellow, or even amber coloured."

"If the lens is removed in this disease, or sinks to the bottom of the dissolved vitreous humour, the green appearance is almost entirely lost."

On the whole, though pleased with the extreme pains shewn by Dr. Sichel in consulting every author, ancient and modern, who has treated of glaucoma, we feel sorry that, throughout the whole of his memoir, there appears a desire to depreciate the labours of Dr.

Mackenzie, when expressly referred to, and on other occasions to appropriate his observations without acknowledgment.

As to the treatment of glaucoma, Dr. Sichel leaves it as he found it, and confesses it to be intractable.

The Life of Sir Astley Cooper, Bart., interspersed with Sketches, from his Note-book, of Distinguished Contemporary Characters. By BRANSBY BLAKE COOPER, Esq., F.R.S.

This work appears to have been undertaken by Mr. Bransby Cooper at the wish of his distinguished relative. It contains a great number of very interesting anecdotes, and a very large portion of the narrative is derived from notes left by Sir Astley for the purpose. To give any connected analysis of such a work is quite out of our power; but we shall extract occasionally such anecdotes as are most likely to interest our readers, one of which will be found at page 571 of our present number. Various circumstances connect the work very intimately with the progress of surgery, both in this country and in Europe, during a period of nearly half a century, and must add to its general interest and intrinsic value.

MEDICAL GAZETTE.

Friday, January 13, 1843.

"Licet omnibus, licet etiam mihi, dignitatem Artis Medicæ tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

INTERMENT IN TOWNS.

Our readers will recollect that about three years ago we commented on Mr. Walker's laudable efforts for the abolition of burial in towns*. We recommended him to come out before the public in a slenderer shape than the octavo in which his opinions were then entombed; and he has followed our advice. Nay, more, he has been so fortunate or so zealous as to procure a select committee of the House of Commons, whose

* MEDICAL GAZETTE, Dec. 13th and 27th, 1839.

report on his favourite topic is now before us*. But as no improvement takes place, or ought to take place, without opposition, the merits of the committee and its report were canvassed in no friendly tone in a series of letters in a dissenting newspaper (the *Patriot*). These have been afterwards republished in the form of a pamphlet† “by the committee for opposing the bill for the improvement of health in towns.”

The select committee observe in their report, that they have considered the subject referred to them under three heads.

In the first place, whether burial in large towns is unwholesome.

Secondly, if it is, what is the remedy?

Thirdly, how can the remedy be applied so as not to interfere with vested rights?

To clear up the first topic of inquiry, the committee examined sextons and grave-diggers, and obtained the evidence of eminent physicians and surgeons, clergymen and high dignitaries of the church; and they came to the conclusion that the nuisance was fully proved.

The remedy consists in prohibiting burial within towns.

The chief difficulties, indeed almost the only ones contemplated by the committee, are pecuniary; the difficulty of buying land to form cemeteries of sufficient size in the neighbourhood of every great town; and the difficulty of compensating the persons whose interests will suffer by these changes.

The committee conclude their report with sixteen resolutions, in which they recommend the prohibition of interments within the metropolis and other

towns with a population exceeding 50,000. They would except, however, the burial of eminent public men in Westminster Abbey and St. Paul's, as well as burial in family vaults already existing, and in some cemeteries of recent construction.

They voted also that the duty of bringing in a bill founded on their resolutions would be best discharged by Her Majesty's Government.

The bill, however, was brought in by Mr. Mackinnon, in the beginning of August, and soon afterwards Parliament was prorogued. It does not appear likely that this bill will be revived, but it is probable that another one on the same subject will be brought in by ministers.

The patriotic pamphleteer gives the substance of Mr. Mackinnon's bill, and grows very wrathful thereupon, affirming that though “loose and flimsy, it is most craftily drawn.”

One of the principal clauses of the bill is that which provides for the formation of a parochial committee of health, to consist of the clergymen and churchwardens of every parish, with the power of levying a rate in order to purchase land for a cemetery; and, also, if thought expedient, to defray the burial-charges of the poor.

Another clause allows the old parochial burial grounds to be planted with trees or shrubs, after having been closed five years; no excavation or disturbance of the soil, however, is to be allowed till twenty years after the last interment in it.

This clause would add, in fact, to our London squares and plantations; and would thus convert noisome caves of Stygian vapour into little groves and parks-breathing health and cheerfulness. But it would be a needless shock to the feelings of survivors to remove the remains of their relations, after the expiration of so short a period

* Report from the Select Committee on Improvement of Health in Towns, together with the minutes of evidence, appendix, and index. Effect of interment of bodies in towns, ordered by the House of Commons to be printed, June 14, 1842.

† Health of Towns: an examination of the report and evidence of the select committee, of Mr. Mackinnon's bill, and of the acts for establishing cemeteries around the Metropolis. 1843.

as twenty years; these consecrated shrubberies should not be disturbed till an epoch so distant that all recollection of the dead should have been effaced; till then they should remain, a grateful gift from the dead to the living,—an example of a poison transformed into a medicine by the magic wand of civilization!

The objections made to the scheme, besides the pecuniary difficulties started by the select committee, are, the disappointment of those who have determined to share the graves of their relations already buried in London; and the loss of the salutary lesson derived by the living as they pass through the resting-places of the dead. To this it may be answered that all improvement must be bought by some sacrifice; "the conflict of interfering duties," says Sir William Jones, "constitutes the nicest part of morality;" and the struggle between imagination and realities is often a strong one. Here, however, the contest can scarcely be a doubtful one; the whole community must not be poisoned, to gratify the refined sentiments of a few; and even if the whole affair is regarded as one of feeling, the daily profanation of our London graves by the pick-axe of the eager sexton must wound more than the utter prohibition of interment within the limits of the metropolis. Moreover, if cemeteries are easily accessible, they may be made sufficiently attractive not only to the relatives of those buried in them, but to others. The Bishop of London, in speaking of Victoria Park (to the north-east of Bethnal Green), observes that it would make a cemetery large enough for the whole of London for the next century; and adds, "but I am glad to see it devoted to the benefit of the living, rather than to the reception of the dead. I do not, however, think the two incompatible: I think you might form a cemetery, and lay it

out in such a manner as Frankfort and other places, so as to make it a cheerful promenade. By cheerful, I mean an agreeable place*." (Report, p. 189.) To show the evils of the present practice, the committee in their report quote several opinions from the evidence, the first being that of the Rev. Dr. Russell. "It is sickening, it is horrible." But, on looking at the evidence itself, we find that the angry pamphleteer is right in his objection to the quotation, for the words refer not to the system in general, but to quarrels about four-pences among grave-diggers.

The next sentence, which they quote from the evidence of Sir James Fellowes, is not very clear. "It becomes a serious question, with an increased and increasing population, upon what rational grounds such an objectionable feature can be longer continued without danger to the public health."

The first witness called before the committee was a Mr. Henry Helsdon, a sort of dissenting minister, and performer of funeral services on the largest scale. He has given up this occupation for some years, and is now clerk to an iron founder in Drury Lane. During the influenza in 1837, when he still drove the burial trade, he buried 21 persons himself one Sunday afternoon. This was in Holywell Mount Ground; but he chiefly officiated at a new ground which was opened on speculation in Golden Lane, Barbican.

"How were the graves generally made?" asks Mr. Mackinnon, the chairman. The witness's answer is instructive.

"The plan on which the grave was opened was quite in accordance with that generally observed or adopted throughout London; that is, the open-

* We can bear witness to the cheerful aspect of the cemetery at Frankfort, which we saw in 1841. The one which we visited is across the Maine, in the suburb of Sachsenhausen. It is a judicious mean between the gloom of a common churchyard and the glaring gaiety of Père-la-Chaise.

ing, what is called a public grave, 30 feet deep, perhaps; the first corpse interred was succeeded by another, and up to 16 or 18; and all the openings between the coffin boards were filled up with smaller coffins of children. When this grave was crammed as full as it could be, so that the topmost coffin was within two feet of the surface, that was banked up, and that piece of ground was considered as occupied."

This burying-place was cheap, and Mr. Helston's office most comprehensive. Mr. Kemble asks—

"In officiating on those funerals, do you officiate for any particular denomination?—No; as a public character.

"Do you use the funeral service of the Church of England?—That is matter of choice; sometimes a short address, with extemporary prayer, has been preferred by some parties."

In a hot summer's day, when the ex-burier was wont to officiate over those economic graves, still gaping for their sixteenth or eighteenth tenant, we can conceive how fierce a stench must have issued from their recesses, and what swarms of flies must have been engendered or attracted by the carrion within, until "I have gone away," says the witness, "so loathing and disgusted as scarcely to be able to endure myself"!

Mr. Helsdon, and others, bear testimony to the love of gravediggers for liquor. Reasons for drinking, indeed, are unfortunately so plenty, that few trades are without some special ones to alledge. The tailor drinks to revive his spirits after the heat of his workshop; the coachman, to protect himself against the cold; the coal-whipper because his toil is so hard; the shoemaker, because his work is so depressing. The man out of employ flies to the tankard as his consolation in trouble; the well-paid journeyman thinks it the most substantial mark of his prosperity. The loathsome nature of the grave-digger's occupation is accepted not only by himself, but by his friends, as an excuse for more than usual intemperance;

especially in London, where his duty is often to cut through the festering remains of the dead, and witness decomposition in its most disgusting forms.

"Are these men" (grave-diggers), asks Mr. Ainsworth, "fond of a little drop now and then?"

John Eyles, formerly a grave-digger, replies, "you can hardly find a man of that sort who is not fond of it."

Report, p. 18.

This propensity of grave-diggers did not escape Shakespeare (in truth, what *did*?), who makes the clown, in Hamlet, say to his mate, "Go, get thee to Yaughan, and fetch me a stoup of liquor."

Indeed, the evidence of several of the witnesses might serve as a commentary on this celebrated scene.

Every one will recollect the throwing up of Yorick's skull; here is the remark of a modern grave-digger:—

"You could not throw up the coffins without throwing up bones?" "Where do you see a grave-yard," answers the witness, "where there are not bones thrown up?"

In Yorick's case, however, the skull had lain in the earth three-and-twenty years; while our London delvers too often break into coffins where the process of decay is not half completed.

When Hamlet asks, "how long will a man lie i' the earth ere he rot?" the clown replies, "'faith, if he be not rotten before he die (as we have many pocky corses now-a-days, that will scarce hold the laying in), he will last you some eight year or nine year: a tanner will last you nine year."

Mr. Walker thinks that at least seven years ought to be allowed for a body in a common coffin; but that an elm coffin, in a moist ground, would last very many years. Dr. Navier, he says, examined three bodies, which had been respectively buried 7, 11, and 20 years, and found them all in a state of active putrefaction.

The Rev. J. E. Tyler, Rector of St. Giles's, believes it to be generally understood that bodies in the churchyards of London are decomposed within 14 years; and states that, in the St. Giles's Old Churchyard, the coffins rot entirely and disappear in twenty years.—Report, p. 79.

Mr. T. Tagg, the proprietor of a burial ground, thinks that a body put into a shallow grave with a light earth would decompose in ten or twelve years. If the grave is deep, and the ground wet, the time would be much longer, especially for the coffin.

We hope ere long to return to this interesting and important subject.

CORONERSHIP OF DURHAM.

A VACANCY is about to take place in Durham in the office of Coroner, and two candidates are already in the field. One of these is a medical man, Mr. Nixon (formerly on the staff of one of the regiments of Guards), whom we know to be an intelligent and well-informed surgeon; and we therefore earnestly recommend to our professional brethren to give him their support.

Much as we differ on most subjects from Mr. Wakley, we are not so uncandid as to deny that he has practically shown the advantage of a medical man holding the office in question, and we hope to see the example followed wherever an opportunity occurs. In New York it has for some time been the practice to select a physician to this office, and a contest has recently taken place in Philadelphia to accomplish the same object, but with what result as yet we know not.

We subjoin Mr. Nixon's address from the Durham Chronicle:—

"Circumstances having occurred to warrant the presumption that a vacancy in the Office of Coroner for your Ward may shortly take place, and as this will be the first instance in which the election (in conformity with the Act 1st Vict., c. 64) has devolved upon you, as Frecholders of the County, I beg to present myself to your notice as a candidate for the appointment.

During the last few years, considerable discussion has taken place as to whether a

legal or a medical Coroner was best adapted to the duties of the office; but it is matter of common assent that he ought to belong to one profession or the other; and the test to which the question has been brought in the practice of the Metropolitan County of England has greatly strengthened the opinion, before very generally entertained, that a knowledge of medical science is the most material qualification for the peculiar, and often difficult, complicated, and delicate, functions which a Coroner has to perform.

A native of your Ward, and educated in the City of Durham, I have been for upwards of 30 years engaged in active professional pursuits, both as an army surgeon (having gone through the Peninsular war under his Grace the Duke of Wellington), and as a private practitioner. I have, therefore, had more than usual opportunities of witnessing instances of death occasioned by violence, in various forms, and of discriminating between these and deaths arising from natural causes.

I respectfully submit my pretensions, founded on these grounds, to your consideration; and venture to hope that you may regard them as a sufficient recommendation to your suffrages.

I may be permitted to add, that I can produce the most satisfactory testimonials as to professional ability and character from some of the highest medical authorities in the public service; and my long residence in the county of Durham, and intimate connection with many estimable and distinguished members of your body, may, I trust, be regarded as a guarantee of that personal respectability and integrity which ought to belong to an individual aspiring to an office of so much ancient dignity, and of such unquestionable importance in its connection with the criminal jurisprudence of the country.

I shall forthwith commence a canvass of the Ward for the purpose of personally soliciting the honour of your support. I will endeavour to call upon every Frecholder; but should any gentleman remain unvisited, I trust he will do me the justice to attribute the omission to no intentional disrespect, but to the imperfection of the lists, or some other cause beyond my control.

ANALYSIS OF COD LIVER OIL.

ISAPONIFIED four ounces of the oil with quick lime, by means like those employed by the stearic candle manufacturers to saponify tallow, and I ignited the dry oleate of lime in a luted crucible. On lixiviating the residuum of the calcination, with alcohol, and

testing the liquid for iodine, I could find no trace of it. Iodide of calcium is not decomposed by heat in close vessels, and as it is a deliquescent salt soluble in alcohol, had any been present, it should have been detected in this way.

I next saponified four ounces of the oil with potash, decomposed the transparent soft soap with dilute sulphuric acid, evaporated the saline solution, nearly to dryness, decanted from the crystals of sulphate of potash the small liquid residuum, and tested it for iodine, but could obtain no trace of its presence. This is the process proposed by Liebig, in the second volume of his "*Chimie Organique*," page 283; but Stein, in the "*Journal für Pract. Chemie*," xxi. 308, says, that the iodine is not to be detected in that way, for it adheres obstinately to the saponified oil, and cannot be found in the decomposed soap lyes. He therefore takes the oleic acid resulting from the decomposition of the potash soap by sulphuric acid, converts it once more into a soap, with potash or soda, carbonizes the dried soapy mass in a covered crucible, and from the resulting alkaline carbonate extracts whatever iodide may be present, by means of alcohol. Neither of the oils which I tried afforded any trace of iodine by this method.

M. Gmelin also carbonizes the soap, but takes that of the first saponification.

Now, since iodine can be detected by suspending a slip of paper coated with starch paste, in a phial over dilute nitric acid, containing not more than one-tenthousandth part of a grain of iodide of potassium, I feel entitled to conclude, either that the cod-liver oil sold as such in London is not genuine, or that some kinds of cod-liver oil are destitute of iodine. There can be no doubt, from the researches of Stein and L. Gmelin, that iodine exists in certain varieties of it.—*Dr. Ure, in Pharmaceutical Journal.*

FELLOWES' CLINICAL PRIZE REPORTS.

BY ALFRED J. TAPSON.

University College Hospital, 1842.

[Continued from p. 464.]

CASE III. — *Irregular paralysis of the portio dura (the fifth and ninth nerves) cured by local depletion and counter-irritation, calomel, &c. and subsequently the endermic administration of strychnine.*

Sarah Marshall, ætat. 62, admitted May 3d, 1842, under Dr. Anthony Todd Thomson. A woman of moderate conformation, nervous temperament, and

pale complexion. Has been married forty-six years, and has had five children, and many miscarriages. Her parents died when she was young. Her father had a paralytic stroke, and lived for two years in a state of helpless paralysis; and her mother died of locked-jaw.

She lives in the Bagnigge Wells Road, and assists her husband, who is a tailor. She has always been delicate, and never could stand much exertion. Never had any serious illness, except syphilis, which she contracted from her husband. During the last six or seven years she has been troubled with rheumatism, but has never been laid up with it. The present attack commenced on the 29th of April (four days before her admission into the hospital), in the afternoon of which day she felt sleepy, had a slight headache, and was unable to hold up her left eyelid; deglutition also was difficult, and she could not drink her tea properly: some of it running out of her mouth again. On the 30th her speech was impaired; her face was puffed, and the mouth drawn towards the left side; and if she attempted to drink the fluid passed up into her nostrils. On the 1st of May she applied to a surgeon, who gave her some medicine, which operated freely on her bowels. On the 2d of May, when she awoke in the morning, she found her tongue lying out of the left angle of the mouth, and was ordered by a surgeon whom she consulted to apply a large mustard poultice to the back of the head and neck: this she says relieved her considerably. Before the attack came on she felt a little giddy and confused at times for some days. Is unable to state any cause of the attack; she had not any unusual exertion or excitement of any kind. It is true that she had been anxious lately, in consequence of being obliged to spend some of her little property. About a week before the attack she had rheumatism in the knees, chiefly in the right; thence it extended upwards to the right hip and to the spine, preventing her from turning in bed; it then passed into her neck, causing great pain if she moved her head round; and lastly, it attacked her head, and she felt numb about the angle of the jaw.

Present Symptoms.—Surface of the body natural; complexion pallid; the face has a flabby appearance; the right side is elongated, flattened, and drawn considerably towards the left, and the left angle of the mouth is elevated somewhat, even when the features are at rest. The left eyelid is dropped, and she cannot raise it; the right eyelid, on the contrary, she cannot close more than about half-way. Sensation is impaired on the left side of the face, and this feels cooler than the right. The motions of the lower jaw and deglutition are very imper-

fectly performed. She says she can only eat on the right side of the mouth, and that with difficulty; and that if any portion of the food gets on the left side of the mouth, she has no power over it. The tongue cannot be protruded far, and when it is protruded it deviates very remarkably to the left side. There is no decided loss of voluntary power over the extremities; the right leg is rather the weaker of the two, but this is the one in which the rheumatism has been most severe. The head is somewhat confused; memory rather impaired; has noises in her ears, and muscæ volitantes flitting continually before her eyes. Pulse 100, soft and regular.

Cucurb. cruent. pone aures ad f 3x.; Emplast. Canth. longum inter scapulas.
 R Calomel. gr. j.; Micæ Panis, gr. ij.—
 M; ft. pilula 8va. quæque horâ sumenda.
 Potass. Iodid. gr. viij.; Potass. Tart. 3j.;
 Infus. Sennæ, f 5vj.; Mist. Camph. f 3j.
 M. ft. haust. 4tis horis post. Pil. sing.
 sumendus. Middle diet.

May 5th.—The blister rose well, and discharged abundantly. To-day she feels more comfortable. The gums are rather tumid and tender, and the breath has a mercurial fetor, and the tongue is slightly furred. Pulse 100; bowels open.

Pergat. in usu medicamentorum sed sumatur pilula bis vice ter die. Milk, a pint daily.

6th.—The paralysis is somewhat less. She can move the jaws and tongue more easily, and consequently swallows better. The tongue, when protruded, still deviates to the left side, and the face remains drawn to the left side, and at the right side of the mouth, instead of the linear furrow usually extending downwards from the nose, there is a fulness here, and the whole right side of the face looks flatter, and feels softer and more flabby than the left. During the night she was seized with vomiting and purging, and pain across the umbilical region. Pulse 90, small and weak.

Omittatur haustus.

R Potassii Iodidi, gr. vi.

Potassæ Nitratis, gr. x.

Mist. Camph. f 3iss. M. ft. haust. ter die sumendus.

10th.—Much improved; the head clearer, muscæ volitantes, &c., much less. She can now raise the left eyelid and close the right. The face continues drawn, but the motions are improving; eats more easily, and the speech is not near so much muffled as it was at first. Sensation is more perfect on the left side. The gums tender; tongue coated with a brownish white fur; bowels open.

Omittantur medicamenta.

Statim applicetur Emplast. Cantharid parvum faciei lateri dextro.

R Strychniæ, gr. j.; Pulv. Sacch. Alb. gr. vj. Ft. pulvis parti vesicati nocte manequè applicanda.

12th.—Slight twitchings have been produced on the face; she says only on the right side, also in the back of the neck and in both legs.

Auge Strychniam ad gr. iss.

Full diet.

14th.—Feels stronger and better altogether. All symptoms of uneasiness removed from the head. The twitchings have been severe; the cervical glands are enlarged and tender; the face also is slightly swelled on the right side. She can move the tongue much more readily, speaks more distinctly, and can drink better. Pulse regular and quick; appetite good.

16th.—Appearance of the patient much more natural. The fulness on the right side of the mouth diminished, and the natural depression partly restored; much less distortion produced by laughing. The patient's spirits are much depressed; cries when spoken to, though she can assign no reason for so doing.

20th.—Very much improved; countenance nearly natural, and speech almost perfectly recovered. The tongue still deviates a little when protruded far, and she is unable to place the tip of the tongue against the posterior teeth on the right side, although she can do so readily on the left side.

Omitt. Strychnia.

21st.—Feels quite well; scarcely any distortion produced even by laughing.

Discharged cured.

REMARKS.—This was a case of local paralysis of a rather complicated kind, and one of which it is not very easy to state the precise pathological cause. The parts paralyzed were the following:—1st. All the muscles on the right side of the face which are supplied by the portio dura: this was proved by the flattening out and flaccidity of the right side, by its being drawn towards the left, and by the inability to close the right eyelids; also by the want of expression on that side, owing to the paralysis of the expressional muscles: thus she could only laugh with one half of her face. 2d. The muscles of mastication, which are supplied by the motor portion of the fifth nerve, seemed also to be paralysed more or less on both sides, though chiefly, according to her account, on the left side. Sensation also was diminished, and the temperature lowered on the left side, depending on the sensory portion of the fifth nerve. 3d. The levator palpebræ superioris of the left

side was paralysed, she being unable to raise the left eyelid; the third nerve must therefore have been implicated. And 4th. The deviation of the tongue, when protruded to the left side, proved paralysis of the muscles which serve to protrude the tongue on the left side, which are supplied by the hypoglossal nerve; this will explain also the difficulty of deglutition. Before we proceed to inquire into the nature of the pathological cause on which these symptoms depended, we shall briefly review the patient's previous history, and the symptoms which preceded the attack. We find that, 1st. She was hereditarily predisposed to affections of the cerebro-spinal system, her father having been a paralytic, and her mother having died of locked-jaw. 2d. She had been anxious and uneasy about her property, and mental anxiety is well known to be a predisposing cause of cerebral affections. 3d. Her health was always delicate and temperament nervous. And 4th. She was arrived at that period of life at which serious affections of the nervous system are most common. Then as to the symptoms which preceded the attack, there was in the first place sleepiness, giddiness, confusion of ideas, and slight headache; and then the attack shewed itself by ptosis of the left eyelid, difficulty of deglutition, impaired speech, and drawing of the face to the left side. The symptoms gradually increased in severity until her admission into the hospital.

In inquiring into the nature of the pathological cause we shall first notice some conditions of the nervous system, which might produce many of these symptoms; and after mentioning the reasons why we believe these were not the real cause, we shall state what we believe to have been the cause in this instance. Inflammation of the brain could not have been the cause here, for there was no increased heat of the skin of the head, no suffusion of the eyes, none of the delirium of phrenitis, and not the pain, &c. Apoplectic effusion could hardly have been the cause, for there was no paralysis of the limbs, as there would almost certainly have been in that case. A state of anæmia, and an irregular distribution of blood consequent on that, was not the cause; there was no marked degree of anæmia; and the physical signs of that, as murmur with the first sound of the heart, &c. were not present. Morbid growths pressing on the origins of the nerves could not have been the cause, both from the comparative suddenness of the attack and the speedy relief obtained. We are reduced, then, to the supposition that the cause was either congestion of the brain, or some affection of the individual nerves; and probably both of these causes were present. Congestion of the brain would account for the sleepiness, confusion of ideas, loss of memory,

tinnitus aurium, *nausæe volitantes*, &c. which are stated as having existed; and we believe that this view is strengthened by the early affection of the ninth nerve, as indicated by the impaired speech, difficult deglutition, &c.; for this is just the part we should expect to be earliest affected by congestion, considering its position with respect to the vertebral vessels at the foramen magnum; we also think that this notion is confirmed farther by the successful result of the treatment adopted. Congestion might also account for the paralysis of the nerves; but this was probably partly dependent on a rheumatic affection of the sheaths of the affected nerves, which we know are affected sometimes with rheumatism, and which affection we also know may produce paralysis. There is at the time we are writing this (June 1842) a case of paraplegia in the hospital, under Dr. Williams, arising from rheumatism, where the paralysis is rapidly disappearing as the rheumatism is being cured by the usual remedies. This opinion is, we think, borne out by the account given in the previous history of the gradual passage of the rheumatism from the lower extremities to the neck and head. We do not lay much stress on this latter cause, but regard it as quite secondary to the congestion.

The *treatment* was, in the first instance, just what we should expect to be serviceable in congestion—viz. local depletion by cupping, followed by counter-irritation and derivation by means of a blister and purgatives with diuretics, and means to equalize the circulation through the capillary vessels, and promote absorption, viz. mercury and iodide of potassium. Under this treatment we find that the symptoms improved rapidly: those which indicated the presence of too much blood in the brain gradually passed off; and simultaneously with this the motions of the paralysed parts improved, and the numbness became less, and in a few days the chief remaining symptom was the paralysis of the portio dura, so that the disease was now reduced to a simple case; and all the symptoms of congestion having been removed, it became a good case for the endermic administration of strychnine, which was accordingly applied in the usual way on a blistered surface just below the zygomatic process; and it was attended with the usual results, viz. a rapid restoration of power to the paralysed muscles, and in a few days she was quite well; the countenance, from being much distorted, had become so nearly natural that no one would observe any deformity unless their attention were specially directed to it. Her general health was also much improved, and she was discharged cured within eighteen days of her admission, and twenty-two of the attack.

This case shows very decidedly the good

effects of early and active measures in congestion of the brain, and also the influence of strychnine in curing local paralysis when not depending on any structural lesion that would interfere with its operation. The effect of this remedy on the animal spirits is curious. In the present instance it caused great depression, crying, &c.; whereas in another case in which it was used recently in the hospital, it produced immoderate fits of laughter. These would seem to imply that, besides its well-known influence on the spinal cord, it also exerted some influence on the cerebrum.

Prognosis.—A much less rapidly favourable result would have been anticipated by most persons in this case, considering the advanced age, the debilitated constitution, the repetition and gradually increased severity of the attack, and the number of the parts paralyzed; and as to any ulterior prognosis, unless the patient is very cautious, she will be very likely to have a recurrence of the attack; and if she has another it will probably be more severe and less remediable.

RESULTS OF AMPUTATIONS IN THE HOSPITALS OF PARIS.

From January 1, 1826, to January 1, 1841, 852 amputations were performed in the hospitals of Paris: of the hip-joint 1; of the thigh 201; of the knee-joint 3; of the leg 192; of the foot 38; of the metatarsal bones 8; of the toes 85; total 528, for the inferior extremity. Of the shoulder-joint 14; of the arm 91; of the fore-arm 28; of the wrist-joint 16; of the carpal bones 9; of the fingers 166; total 324, for the superior extremity. The mortality was 332, or nearly two in five; 255 for the inferior extremity, or about one-half; 77 for the superior extremity, or nearly one-fourth.

The single coxo-femoral disarticulation was secondary, for a gunshot wound, and on a male patient of twenty one years, and was fatal.* In 201 amputations of the thigh in its continuity including all causes, ages, and both sexes, there were 126 deaths, nearly sixty-two per cent., or about two-thirds. For wounds, burns, fractures, &c., there were forty-six; 44 men and 2 women; of the men, 34 died and 10 recovered; of the women, both recovered. Total of deaths

34, or three-fourths. For chronic diseases there were 153 amputations, 92 deaths, 61 recoveries, or three deaths in five. The number is completed by two amputations for double ankylosis, performed successively by M. Velpeau, on a man of twenty-eight years, and with success.†

Amputation of the knee-joint.—This abandoned operation was revived in 1830 by M. Velpeau, who, with his peculiar industry, had collected 14 cases and 13 cures. These were isolated, and collected from books, or other imperfect records; and that the conclusions he made were not warrantable, was clearly proved by the subsequent constant fatality of the operation, and which, since 1838, has been banished from the hospitals of Paris. M. Velpeau has operated six times; four deaths. M. Laugier twice, two deaths. M. Blandin once; one death.

Amputations of the leg.—Of these there were 192, and 106 deaths, nearly 55 per cent., or one-ninth less than in amputations of the thigh. For organic diseases 112, 55 deaths, or one-half. For traumatic lesions 79, 50 deaths, or nearly two-thirds. One amputation of *complaisance*, performed at the Hôtel-Dieu, on a man of 19 years, for club-foot, and followed by death.

Partial amputations of foot.—38 patients had their feet amputated, and 9 died, or 24 per cent. For organic lesions 9, and 3 deaths, or about one-tenth. For traumatic lesions 9, and 6 deaths, or just two-thirds.

Amputation of the shoulder-joint.—Surgeons have, in general, reported an incredible success in this operation. M. Gourard, quoted by M. Velpeau in his *Médecine Opératoire*, says, “we have performed, and seen performed, this operation with such happy results, that we hardly believe it more dangerous than amputation in the continuity of the humerus, and even consider it doubtful whether, in gun-shot wounds, it is not to be preferred.” M. Blancel mentions 60 successful cases in his thesis. Baron Larrey states that he was successful 90 times in 100 cases. Sabatier speaks in terms of enthusiasm of 14 successes in 17 cases obtained by this surgeon; and Percy states that of 70 cases, one-sixteenth only terminated fatally. Let us see how far M. Malgaigne's statistics confirm these statements. There were in the period of five years under consideration 14 scapulo-humeral disarticulations. In one patient there was, at the same time, amputation of the thigh, and, as a matter of course, he succumbed. Throwing aside this, there remain 13 cases and 10 deaths. Six times the operation was performed for chro-

* The first successful amputation of the hip-joint was performed in 1841, by M. Sedillot, at the military hospital of Val de Grace. In the report made to the French Academy of Medicine on the 3d January, on this case, by Baron Larrey, it is recommended to tie the artery before commencing the operation, the utility of this practice having been proved in the course of the practice of the reporter.

† Recently M. Jobert, of the Hôpital St. Louis, performed a double amputation of the thigh on a man of twenty-eight years, for a scrofulous tumour of each knee-joint with entire success.

nic diseases; of these, 4 were men from 15 to 41 years; the young man of 15 recovered, all the others died. Women, respectively of 19 and 40 years of age, 2; both recovered. For traumatic lesions 7 operations, all males, from 27 to 65 years; 7 deaths.

Amputation of the arm.—91 operations, 41 deaths, or 45 per cent., nearly one-fifth less than in amputation of the leg. Of these 91 amputations, there were, for organic disease 61, and 24 deaths, or 2 in 5. The traumatic amputations were in number 30, and 17 deaths; more than one-half.

Amputation of the fore-arm.—28 operations, 8 deaths; 28 per cent. Of these, 17 were performed for organic disease, and 11 were traumatic; of the former, 5 died; of the latter, 3.

Amputation at the wrist.—The wrist was disarticulated 16 times; 12 times for chronic affections, 4 times in consequence of injuries. Of these, 4 were women and 12 men. All recovered.

Amputation of the metatarsal bones.—8 amputations of a single metatarsal bone were performed; one only is designated as a disarticulation. 7 of these were upon males from 8 to 41 years of age; 1 on a female of 45 years. 6 were for organic lesions; 2 were traumatic. 1 death in the second series, where the head of the bone was removed, in a man of 41 years. 4 times the first metatarsal bone was the seat of operation; twice the fifth; once the second; in the eighth the bone is not specified.

Amputation of the metacarpal bones.—9 operations, limited to one of the metacarpal bones. 1 only was traumatic, and was successful; 8 were for organic lesions; among these there was 1 death in a young man 22 years. The third metacarpal bone was amputated 6 times, the fourth once, and the first twice.

Amputation of the great toe.—43 disarticulations, and 7 deaths, or 1 in 6, which is enormous. 29 were from organic disease, and 14 were traumatic. Of the first series 3 died, about one-tenth; of the last, 4 died, or more than one-fourth. Of this number 5 were females, all for organic disease, and all recovered.

Amputation of one of the toes.—26 operations, of which 12 were traumatic, and were followed by one death. Of these, there were 28 males and 5 females, from the ages of 5 to 62.

Amputation of several toes at the same time.—In 7 operations there was 1 death.

Amputation of one or more phalanges.—9 operations; 4 times on the phalanx of the great toe; twice upon the phalanges of the fourth and fifth; the three others not specified. No death.

Amputation of the Thumb.—9 operations

and 3 deaths; 3 times for organic diseases, and for a supernumerary thumb; 5 times for traumatic lesions, and of those 3 died. Three deaths in five would seem to realize for the thumb Mr. Velpeau's assertion that "amputation of the fingers is not less dangerous to life than amputation of the arm."

Amputation of one of the fingers.—119 operations; 109 recoveries, 10 deaths, or one-twelfth. Organic, 79; deaths, 6, or one-thirteenth; traumatic, 40; 3 deaths. Total, 1 death in 10.

Amputation of several fingers at one time.—13 operations; one death, in a man of forty-two years, who had four fingers amputated.

Amputation of the phalanges.—This operation was performed 24 times; there was one death in a man of thirty-two years, in whom the phalanx was crushed.—*Philadelphia Medical Examiner.*

PORTUGUESE PRACTICE.

(Continued from page 523.)

Aneurism of the external iliac and femoral Arteries at their origin.

A FOOT-SOLDIER, who had been some time in other hospitals, left St. Michael in January 1828, and entered St. Francis. He related, on his entrance, that he had suffered from different venereal complaints, and, among others, had had a bubo in both groins five years before. On examination, a tumor, pulsating isochronously with the heart, was found in the left groin, which extended inwards close to the parietes of the abdomen, and was painful and dark red; it was recognized to be an incurable aneurism, which, even a few months before, had been taken for a bubo. ["Hardly conceivable," says the German translator.]

On the day of admission, as the patient was very weak, he was bled to eight ounces; leeches were put on close to the tumor; poultices were applied; and broth and demulcent beverages were ordered. In spite of this treatment the inflammation of the tumor increased; it became gangrenous; and the patient died on the sixth day.

On post-mortem examination, besides the aneurism in the groin, a second aneurismal sac, from five to six inches in diameter, was found in the left iliac fossa, which extended as far as its middle, and posteriorly touched the last lumbar vertebra. Both the aneurismal sacs arose from a fissure, which ran parallel to the crural arch, and eight lines long and two broad. The sacs were filled with coagulated blood; their parietes were easily torn, and were visibly gangrenous. The external iliac artery was inflamed and

contracted, as was also, in a less degree, the common iliac, where the former arises from it.

Cure of an Aneurism of the posterior Tibial Artery by amputation of the Leg.

A major of artillery, at Elvas, had had an enormous tumor for three years, which occupied the whole circumference of the upper part of the left calf. When he was admitted into the institution at Lisbon, an aneurism of the tibial artery was distinguished with difficulty, on account of the great circumference, and the degeneration of the parts. The degenerated state of the soft parts indicated amputation as the sole remedy. He was first subjected to a preparatory course suited to his age (50), his shattered constitution, previous hæmoptysis, and considerable hypertrophy of the heart. It consisted of abstraction of blood, purgatives, and spare diet. Ten days after his admission amputation was performed above the knee; and the patient was discharged, completely cured, in six weeks.

On dissecting the amputated limb, it appeared that the posterior tibial artery was the seat of the rupture; the aneurismal sac was filled with layers of solid lymph, and had fissures, which formed smaller sacs, full of coagulated blood. The tibia and fibula had entirely shrunk away in the region of the aneurism. The artery was ossified around the fissure.

Besides this one, many other cases of aneurism are mentioned, namely, of the femoral artery: and, with one exception, they were all cured by ligature. A case also occurred of dilatation of the whole venous system, and the right ventricle of the heart, by gases, which were collected and chemically analysed. A report on the subject is to follow.

Gun-shot Wound of the Abdomen, with injury of the Intestines, cured without Operation, by Signor M. J. M. Costa.

A robust peasant, aged 20, on the 18th November, 1838, was wounded by a gun fired close to him, so that four balls, with wadding, and fragments of clothes, entered his body about an inch above the anterior and superior spinous process of the left ilium, and came out close to the left transverse process of the last lumbar vertebra. Anteriorly and posteriorly two wounds were seen: a larger one, which was oblong; and a smaller one, which was round. The hæmorrhage was slight, and soon stopped without the assistance of art.

After the foreign bodies had been removed as gently as possible, the wounds were covered with compresses, dipped in cold water and vinegar. During the first night the patient

slept tranquilly for several hours; his pulse was natural, his urine free, and of a healthy colour; the bowels were not open.

On the 19th local applications were employed, with emollient clysters, low diet, and the internal use of barley-water and tamarinds. There was no motion before the evening, but part of the clyster issued from his mouth, a proof that the intestines had been wounded. In the evening, inflammatory irritation of the wounds and fever came on. The treatment was the same; except that warm and emollient poultices were used instead of the cold ones. On the 21st, a small slough came off the sores, and some fæces and gas issued forth. On the evening of the 22d the natural stool was scanty, but fæces very copiously discharged from the mouth. The treatment on the whole was the same, with clysters of milk and water. The patient's general state was good.

On the 25th there was a consultation of the surgeons, in which some proposed invagination, others a compressive bandage. Signor Costa thought the former not admissible, because the wound was too deeply situated in the sigmoid flexure of the colon; and the latter equally inexpedient, on account of the continual sloughing, and the state of the sores. The previous treatment was therefore continued. On the evening of the 26th a considerable slough came away, and the sores looked clean. Tents of charpie, covered with spermaceti ointment and oil of sweet almonds, were now introduced into the wound, and drawn through from one to the other, avoiding the wound in the intestines as much as possible. On the 27th there were two considerable natural evacuations, and none through the wounds; the former occurred again on the following days, and some more flatus issued from the wounds. When the sores were dressed on the evening of the 30th, an accumulation of fæces was perceived at the posterior one: this occurred again several times up to the 4th of December, with an admixture of pus. By the 8th cicatrization, attended by a discharge of healthy pus, had made considerable progress. On the 10th of January the wounds were cicatrized, and all the natural functions were in good order.

[To be continued.]

A CASE OF
PRESERVATION OF THE HUMAN
BODY BY THE ACETATE OF
ALUMINA.

By JNO. T. SHARPLESS, M.D., Philadelphia.

As the process of embalming the human body, for the purpose of transportation or

long preservation, has rarely been attempted in this city, (except for the purpose of the anatomist,) it may prove interesting and useful to state the result of an experiment recently made.

A gentleman from Canada, aged 64 years, died in June last of cancer of the stomach. One year previous he weighed 208 pounds, and at his death about 140 pounds, and had become very much infiltrated with water. To enable his family to take him home, Dr. Wm. R. Grant, Demonstrator of Anatomy of Jefferson College, and the writer, undertook to preserve the body. The weather was very sultry, with rain and sun nearly every day.

He died at 6 o'clock A.M. on Friday. In the afternoon the only incision that was permitted by the family, was made in the middle of the abdomen, and large injecting tubes were placed in the aorta below the superior mesenteric artery, one pointing each way. A saturated solution of corrosive sublimate in alcohol was thrown in, a quart upward and a pint downward, and the body was kept damp by a weaker mixture.

We next day injected the same quantity of a saturated solution of the acetate of alumine, which had the immediate effect of giving the whole body a manifest rose colour, making it resemble life in a remarkable degree. The face and hands were constantly damp with the solution, and the body frequently washed with it.

The next day, Sunday, being an exceedingly hot day, there was a green stripe the whole length of the fibula of one side, and a similar spot upon the ribs, with vesications on several parts of the body, but no odour or other indications of putrefaction. The usual blue effusion of blood along the back and under parts had changed to a bright red, which remained to the last. We again injected nearly the same quantity of the aluminous solution with sufficient force to distend the arteries of the forehead, during which operation the green stripes upon the leg and ribs changed to a light brown, which colour they retained until the body was sent away. On Monday a pint of the solution was injected, the tubes removed, the aorta well secured, and the abdomen closed, and at 9 P.M. the body was placed in a coffin, with cotton wadding dipped in alcohol around the face and hands. The joints were all perfectly flexible; the skin of the limbs and body was so like life, that, from appearances, no one would have believed them dead, the hands more particularly, the skin of which was very soft, and the fingers were beautifully tinted with a bright rose colour, as were also the convolutions of the ears. The face was less natural, having shrivelled from the constant contact of the solution. There was

no ice used, or any precaution against the heat, the body being in a room with little circulation of air, and the sun shining in and even upon the body several hours in the morning.

It was removed next day, Tuesday. During its transit, it was, of course, exposed to great heat from the sun, the weather remaining exceedingly warm, and the size of the inclosing box preventing it being well covered. It arrived at home on Friday afternoon, the eighth day after death. The appearance upon arrival I will give as received by letter. "The coffin was opened at 4 o'clock P.M., and you would have been much pleased to have seen how slight a change had taken place; none whatever in the face, unless it was a little thinner. The hand, left exposed for view, was, however, less beautiful than when you saw it, having become, with the exception of the fingers, of a darkish hue. The next day the face began also to change in colour." There was a slight odour, but not of putrefaction, or any other indication of such a change. The body was buried on Monday, the eleventh day after death. The brown colour mentioned was from mere desiccation of the skin, and if the parts had been kept moist, the colour would have remained white and natural.

The sublimate was used in this case to make the result more certain (although perhaps unnecessary,) the time required for preservation being long, the weather exceedingly warm, and the subject a bad one, from the great infiltration of water through all the cellular membranes. Whether the delicate rose colour, so perceptible upon the surface, arose from the chemical action between the two injected fluids, is not known, but it certainly added much to the natural appearance of the body.—*Philadelphia Medical Examiner*.

ASTLEY COOPER'S DEBUT IN SURGERY.

It is one of those unaccountable occurrences in which an individual, by a single action, seems to display an intuitive knowledge of a principle which it has taken others, in the progress of science, years to arrive at; and, in this instance, seems to justify the application to the surgeon—of the observation usually applied only to the poet—"Nascitur, non fit." The circumstance we are about to mention is, at first sight, but little remarkable; but assumes considerable interest when we reflect on the train of reasoning which must have, although perhaps insensibly, passed through the mind of Astley Cooper, before he could possibly have arrived at the conclusion on which he acted.

The occasion to which these remarks relate was the following :—

We have already mentioned the circumstance of Astley Cooper's being nursed by a foster mother, Mrs. Love. A son of this person, somewhat older than Astley Cooper, had been ordered by his father to convey some coals to the house of Mr. Castell, the vicar, and while on the road, by some accident the poor lad fell down in front of the cart, one wheel of which, before he could recover himself, passed over his thigh, and, among other injuries, caused the laceration of its principal artery. The unfortunate boy, paralyzed by the shock of the accident, and sinking under the loss of blood,—the flow of which was attempted to be stopped by the pressure of handkerchiefs applied to the part only,—was carried, almost exhausted, to his home, where Astley Cooper, having heard of the accident which had befallen his foster-brother, almost immediately afterwards arrived. The bleeding was continuing, or, probably having for a time ceased, had broken out afresh. All was alarm and confusion,—when the young Astley, in the midst of the distressing scene, alone capable of deliberating, and perceiving the necessity of instantly preventing further loss of blood, had the presence of mind to encircle the limb with his pocket handkerchief above the wound, and afterwards to bind it round so tightly, that it acted as a ligature upon the wounded vessel, and stopped the bleeding. To these means his foster-brother owed a prolongation of life until the arrival of the surgeon who had been sent for from London.—*Life of Sir A. Cooper.*

CASE OF

ANOMALOUS PERIODICAL OVARIAN TUMOR.

By CHARLES O. WATERS, M.D.

MRS. M—, aged about 43, enjoyed uninterrupted good health till about the 18th year of her age, when great menstrual derangement, almost amounting to suppression, supervened. This derangement seems to have originated from sea-bathing, during the period of the catamenial discharge and at other times. The patient, from a feeling of delicacy too common in such cases, kept her disease as profound a secret as possible. About this time she was married, and it was not until some years after, that, worn down almost by a profuse and obstinate leucorrhœa, which followed soon upon the menstrual derangement, and was finally attended with considerable prolapsus uteri, she laid her

case fairly before her physician. Under his treatment the leucorrhœa was, I believe, entirely cured, and the prolapsus remedied by means of a supporter, which has been worn up to the present time. It does not appear, however, that the catamenia were ever re-established; at any rate they have not appeared for the last eight or ten years, and the patient, naturally of what is sometimes called the “nervous” temperament, has of late years laboured under excessive nervous impressibility. Some six or eight years since she began to suffer much from the frequent recurrence, in the præcordial region, of a pain very much resembling the pain of that anomalous disease, “angina pectoris.” This being attended with dyspnœa, considerable ascites, &c., she was attended by several physicians in turn, and treated for pericarditis, “dropsy of the heart,” &c., under all which no material amendment was perceptible. These spasms of pain becoming considerably aggravated, and being attended with considerable determination of blood to the head, at such times as the catamenial evacuation should naturally have occurred, monthly venesection was resorted to about two years since, and at the time of my acquaintance with the patient—about one year ago—had become an established habit. These monthly bleedings being undoubtedly injurious in their ultimate effects upon persons of such nervous impressibility, I am trying to discontinue them, and procure relief by the use of other means.

With these preliminaries, I come now to the facts from which I think the case derives its chief interest. The patient seems for some time previous to have suffered much from pain in the left iliac region, but it was only about two years ago—at which time she fell into the hands of my former partner, Dr. S. B. Hanford—that a tumor was discovered, evidently rising from the left iliac region, and occupying at least one-half of the abdominal cavity. It is not probable it had attained this size in a very short space of time. The breasts of the patient were enlarged, indurated, and very painful, particularly the left, and she had very much the appearance of a woman far advanced in pregnancy. I regret that I am unable to state the particular course of treatment to which the patient was then subjected, but mercurials and the various preparations of iodine were used both internally and externally. Diuretics and cathartics were also administered, and a strict course of diet and regimen entered upon.

Whether as a result of the treatment adopted or not I am unable to say, but about two months afterwards there occurred, *via vagina*, a sudden and profuse discharge of “a thick, yellowish, andropy substance,” filling

two ordinary chamber vessels. The tumor, as examination showed, disappeared during this discharge; and after its cessation, the left ovary could be felt nearly in its usual place, and about the size of a common butternut. This was in the fall of 1840.

During the winter the patient was tolerably comfortable under the use of the hydriodate of potash, laxatives, and diuretics.

The ensuing summer was spent mainly in the city of Troy; and in the month of September, 1841, she came under my medical care—ill health having compelled her former attendant to retire from practice. The ovarian tumor had now nearly regained its usual size; her breasts were swollen and painful; her stomach was very irritable; appetite poor; considerable anasarca, and much functional derangement of the heart, though no evidence, upon auscultation, of organic disease of that organ. The tumor was very painful, which, aggravating the previous nervous irritability, gave the patient but little rest night or day. I commenced the use of the following prescription:—

R. Pulv. Camphoræ, ʒss.; Pulv. Opii, ʒj.; Ung. Hydrargyri Fort., ʒij.; Iodini, ʒj.; Axungię, ʒij.; Ung. fiat.

Use two or three times a-day upon the tumor. Also,

R. Gambogię, gr. vj.; Mit. Chlorid. Hyd., gr. j.; Jalapę, gr. iv. To be taken every other day.

Under this treatment the tumor enlarged but little, if any, but still continued painful. The purgative mixture was continued about ten days, when anodynes were resorted to more freely—the bowels being kept open by the use of Sulph. Magn. and Bi-Tart. Pot. The external application was continued.

About the tenth day the purgative mixture was repeated, and on the ensuing night a second discharge occurred, by way of both vagina and rectum—similar in every respect to the matter first discharged, but somewhat less in quantity. The change in the personal appearance of the patient was surprising. I now commenced the use of eutrophics—other than the preparations of iodine—for the purpose of restoring tone to the system generally; and of diuretics, to reduce the ascites and anasarca.

Under the use of these the patient's health, up to the month of April last, was better than it had been for many years before. The præcordial pain still, however, continued, and was relieved as before mentioned, and I had strong hopes that our old acquaintance, the tumor, had disappeared for ever. At that time, however, the pain in the left iliac region returned, and, after a short time, I perceived the left ovary enlarging for the third time. This it continued to do, attended

with the same severe symptoms as marked its former growth, until about the 15th of last month, (July, 1842,) when, while the patient was under the effects of a cathartic of gamboge and jalap, a third discharge occurred *via recti et vaginę*. The matter now discharged very much resembled that formerly passed in the same manner, but was much more offensive—so much so that I never saw it—and was about the same in quantity. The patient, for four or five days after, complained of a continual "gurgling" sensation in the bowels, and twice threw from the stomach matter resembling, as she said, that just passed from the rectum and vagina. For two consecutive days—and no longer, though the weather was very warm—a healthy perspiration made its appearance—a circumstance before unknown for ten whole years. The patient is now able to move about and attend to her domestic duties—not very arduous, as she has never been pregnant.

She complains of considerable pain over the left ovary, which can be felt in its usual situation. This pain seems materially relieved by the Unguentum Ext. Belladonnę. The size of the ovary is about that of a common butternut.

Bowels regular; pulse weak, languid, and at times remitting. There is at present also considerable pain down the left limb, attended with much weakness of the part.

Perhaps I might mention that, for a few days before the last disappearance of the tumor the pain from it was considerably increased during and after the passage of urine. Was this occasioned by the withdrawal of the support afforded to the tumor by a distended vesica urinaria?

Such is the history of the case, given as briefly as possible. The question suggests itself, Can any means relieve this patient, by preventing the re-appearance of this tumor? Upon this point I would invite the opinions of the profession.—*Philadelphia Medical Examiner*.

BONE-SETTING EXTRAORDINARY.

At the village of Warmington, in the county of Warwick, but in the Poor-Law Union of Banbury, an aged pauper met with his death under circumstances which can be well understood from a brief of the proceedings upon the Coroner's inquest.

The inquest was taken by a Jury, before George Cattel Greenaway, Esq., one of the Warwickshire Coroners, on the 31st ult.

Hannah Coleman, wife of John Coleman, stated that she was the daughter of John Horsley; his age was 76, and they lived in the same house; he was half childish.

John Coleman, the husband, proved that at four o'clock in the morning of Tuesday, the 20th of December, he found the deceased under deceased's bed-room window, much hurt; the window was twelve feet from the ground, and deceased had fallen from it. The witness applied to Mr. Wyatt, the Overseer, who recommended that Mr. Wise, a surgeon, of Banbury, should be sent for, but witness did not think it necessary, and the following day Mr. Wise called. The witness was not aware the deceased had sustained a fracture of the thigh, until informed of it by Mr. Wise.

Mr. Robert Stanton Wise, the surgeon referred to, stated, that hearing of the accident, witness called on the deceased, when he found his left thigh considerably swollen, and broken about the middle, (the fracture being a simple one) and he had sustained various other injuries on the leg and body; but there was no external wound on the thigh. The witness placed the limb in a proper position, and ordered the patient to be kept quiet. Witness visited the patient on Friday morning, the 23rd instant. In reply to a question from the Coroner, enquiring why Mr. Wise had not visited his patient on Thursday, he explained that he did not consider it necessary, and thought him in no immediate danger. Mr. Wise went on to state, that on attending on Friday morning at the house of the patient, with splints, bandages, &c., he was informed by one of the farmers of the parish, that there had been a meeting of the parish that morning, and that they had determined to place the patient under the "Bone-setter."

Hannah Coleman, on further examination, stated that Mr. Matthews, the "Bone-setter," first saw the patient on Saturday, the 24th of December, and he saw him daily until his death; he directed the limb to be poulticed. A wound first appeared on the front of the thigh on Sunday, the 25th, and the bone first protruded through the wound on Tuesday, the 27th: the patient gradually sunk, and died on Thursday evening, the 29th. After Mr. Wise had, in such a manner, been informed that the parish had employed the "Bone-setter," he retired, and did not again attend.

In answer to questions from the Coroner, as to the cause of death, Mr. Wise, judging from what he had seen and heard, distinctly stated the man's death was occasioned by the fall from the window, accelerated by the simple fracture being converted into a compound fracture, from the want of proper surgical treatment and attendance, and which would not have been the case had he been under the care of a regularly educated and qualified surgeon.

The jury, after a brief charge from the

coroner, returned a verdict of "Accidental death."—*Banbury Guardian*.

FOREIGN BODY IN THE EAR SEVEN YEARS.

DURING the latter part of last January, I was called to examine a girl, about thirteen years old, who complained of pain and deafness, with occasional annoying sounds in one ear. From the closest inquiry into the history of the case, I could learn nothing which gave the least explanation of these symptoms, except that, on reflection, her mother remembered being alarmed by the child coming to her, when she was about six years old, and telling her that she had got a grain of coffee in her ear. Not having the aid of bright sunshine, I could not make a satisfactory examination, although I discovered a dark substance, which I supposed to be inspissated cerumen, lying apparently upon the tympanum. I therefore syringed the ear with warm water and Castile soap. On throwing in about the third syringe with some force, a black-looking substance shot into the basin, which on examination proved beyond doubt to be half of a coffee grain. She has been ever since entirely free from any unpleasant feeling in the ear, and has recovered her hearing.

It is stated in various Journals, that Carpenter has successfully employed cold water injection, for the removal of foreign bodies from the ear.—*Philadelphia Medical Examiner*.

BRIGHT'S KIDNEY.

URINE APPARENTLY NORMAL.—Dr. Graves laid before the Society* two kidneys from a man named Connell, æt. 50, of intoxicated habits, who had died of consumption and dropsy in the Meath Hospital. Of these the right was of the natural size, and on being cut into appeared pale and granular. The other was one of the best specimens he had ever seen of what is designated Bright's kidney. It was hard and very small; the capsule came off readily, and the surface of the kidney then appeared rough and nodulated, indicating the latter and more confirmed stages of the disease. There had been five examinations made of the urine while he was in the hospital. It was ascertained to be healthy, and had no trace of albumen. This coincided with observations made by Dr. Graves in some other cases. Dr. G. objected to the doctrines of Rayer, as inconsistent with pathology. Rayer had asserted that there is an albuminous nephritis, which

* The Pathological Society of Dublin.

is only distinguishable by symptoms from common nephritis. But this was inconsistent with cases Dr. G. had observed. Symptoms of disease might be explained, by reference to structural changes, but these changes were not to be explained by reference to symptoms.

DROPSY.—Dr. Corrigan said, that the specimens which he had now to lay before the Society, were taken from the body of a man of broken down constitution, who had laboured under dropsy, connected with that state of the kidney which is denominated Bright's Disease. The surface of the kidney was yet smooth, its substance was yellow, and had no tendency to contract; it was analogous to the pale yellow liver, and it was evident that this was not the first state of the contracted kidney. The liver appeared to be undergoing a similar change of structure, and externally there was a deposit of lymph upon it.

In this case the urine had been slightly albuminous. It had been observed, that the quantity of albumen is greatest in the early stages, and diminishes as the disease proceeds. The very low specific gravity of the urine, ranging from 1001 to 1005, indicating the presence of but one-twelfth of its usual solid ingredients, shewed that the disease was of the worst and most fatal form.—*Dublin Journal.*

DUTCH MEDICAL INSTITUTIONS.

To the Editor of the Medical Gazette.

SIR,

It appears to me that the remarks of Mr. Hamilton upon some of the Medical Institutions of Holland (which I have read in this day's number of the Gazette,) so far from presenting, what I should have been glad to see, a more favourable account of these Institutions, rather tend to confirm the opinion which I allowed myself to express as to the backwardness of the medical sciences, from what I was able to perceive in the course of a short visit to that country, and which opinion is corroborated by other visitors. Indeed, Dr. Varrentrapp expresses himself in stronger terms than those which I have quoted from his work with reference to the disgraceful state of the General Hospital at Leyden at the time of his visit. That Mr. Hamilton should have experienced much courtesy and civility from individual Professors I can readily believe, having myself met with every attention and facility in my inquiries during several years into the state of the Continental hospitals and practice, and though gratefully acknowledging such attentions, I should not have thought myself justified, while professing to give a correct account, in allowing them to impart an undue

bias to the statements which I made in my work upon the Medical Institutions and Practice of France, Italy, and Germany.*

It will be seen, on referring to my notes, that I did justice to the excellence of the Dutch Anatomical and Pathological Museums; but as regards hospital organization and practice, the little which Mr. Hamilton has advanced conveys an unfavourable impression of them. Thus, with reference to the Town Hospital of Amsterdam, he is "greatly astonished at the immense number of beds set closely together in the same ward crowded to great excess," and refers to the remarks of Professor Graham as to the fatal consequences likely to result; and in speaking of the high and bare roofs in the hospital, he notices the circumstance of the swallows flying about in the wards in considerable numbers, and of the beds touching each other, respecting which the Physician had appealed to the ruling authorities without effect; concluding his notice with the observation—"The crowding of this institution struck me as greater than in the other;" while it seems that at Leyden he made no attempt to enter the hospital; had he done so, he might have experienced similar obstacles to those which I met with.

I am, sir,

Your obedient servant,

EDWIN LEE.

Brighton, January 7, 1843.

POOR LAW COMMISSIONERS AND SCOTCH DIPLOMAS.

To the Editor of the Medical Gazette.

SIR,

PERMIT me to remind your correspondent E. M. R. (page 432), that Article 5 of the Medical Order, provides for the retention in office of duly licensed medical men already in the employ of Boards of Guardians, without possessing a qualification under Article 3.

The following case speaks volumes as to the steady persistence of the Commissioners in the execution of their plan, without fear or favour; and makes it in the highest degree improbable that the newspaper statement referred to by E. M. R. is correct.

A licentiate of the College of Surgeons, Edinburgh, and of the Apothecaries' Company, London, who had been no otherwise known to the Commissioners than as having addressed to them an earnest remonstrance on the injustice and illegality of their qualification clause, was lately elected a medical officer in a union

* A new and enlarged edition of which will appear in a few days; with a parallel between English and Foreign Medicine and Surgery.

near London. Two days afterwards, an apothecary in the neighbourhood, who had previously held no diploma in surgery, procured that of the London College, and wrote to the Commissioners protesting against the appointment of the Edinburgh surgeon, while there was any *double English* practitioner (*e. g. himself*) disposed to take office. The Commissioners, however, on ascertaining that at the time of election there was no candidate whatever but the gentleman who was actually chosen, confirmed his appointment, and as if to shew their entire freedom from any personal or national prejudice, volunteered a remark that they thought the salary proposed for him *rather low*.

There is every reason to believe that on the re-enactment of the Poor Law in the approaching Session of Parliament, the recent Medical Order will be for the most part, if not entirely, superseded; and in the meanwhile, all who have any experience of the conduct of the Commissioners will quietly and confidently rely on their acting strictly according to the principles they have in the exercise of their best judgment adopted.—I have the honour to be, sir,

Your most obedient servant,

EDINBURGO-LONDINENSIS.

Jan. 6, 1843.

HANWELL ASYLUM.

To the Editor of the Medical Gazette.

SIR,

YOUR interesting review of Dr. Conolly's admirable report of Hanwell Asylum tempts me to trouble you with a fact, which, from its affording the strongest evidence of the perfection of Dr. Conolly's humane system, will, I think, prove interesting to your readers.

At 11 o'clock at night, on Saturday, the 5th of November, I visited the wards of the Asylum with Dr. Conolly. There were then, I believe, exactly 948 patients in the house, and not one of them under personal restraint. We went into every ward, and, with the following exceptions, there was not a sound to be heard. Two women, each in different parts of the house, were chaunting or singing in a low tone, just audible; a third was talking violently, but ceased before we left the ward; and one man made use of a violent expression as we passed him. To me it is perfectly astounding that such a death-like stillness should reign in a house containing nearly a thousand lunatics. I shall never forget the impression it made, and the reflections it gave rise to in my mind.

I have the honour to remain,

Yours faithfully,

SAMUEL SOLLY.

St. Helen's Place.

ROYAL COLLEGE OF SURGEONS.

LIST OF GENTLEMEN ADMITTED MEMBERS.

Friday, January 6, 1843.

R. J. Mack.—K. Kittoe.—J. H. Wilmot.—J. Virtue.—L. Fowle.—R. A. Varicas.—C. R. Francis.—W. H. Walker.

A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, December 31, 1842.

Small Pox	4
Measles	45
Scarlatina	35
Whooping Cough	31
Croup	8
Thrush	6
Diarrhoea	3
Dysentery	3
Cholera	2
Influenza	3
Typhus	30
Erysipelas	6
Syphilis	0
Hydrophobia	0
Diseases of the Brain, Nerves, and Senses ..	137
Diseases of the Lungs and other Organs of Respiration	314
Diseases of the Heart and Blood-vessels	36
Diseases of the Stomach, Liver, and other Organs of Digestion	63
Diseases of the Kidneys, &c.....	12
Childbed	9
Ovarian Dropsy	0
Disease of Uterus, &c.	2
Rheumatism	5
Diseases of Joints, &c.	3
Ulcer	1
Fistula	0
Diseases of Skin, &c.....	1
Diseases of Uncertain Seat	122
Old Age or Natural Decay.....	55
Deaths by Violence, Privation, or Intemperance	49
Causes not specified	19
Deaths from all Causes	1004

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude $51^{\circ} 37' 32''$ N.
Longitude $10^{\circ} 3' 51''$ W. of Greenwich.

Jan 1843.	THERMOMETER.	BAROMETER.
Wednesday 4	from 30 to 42	29.83 to 29.93
Thursday 5	30 39	29.73 29.93
Friday . . 6	29 40	30.02 29.90
Saturday . 7	30 45	29.80 29.78
Sunday . . 8	30 42	29.78 26.88
Monday . . 9	20 41	29.89 29.24
Tuesday . 10	32 41	28.85 28.99

Wind, S. and N.W. on the 4th; S.W. and N.W. on the 5th; N.W. and W. by S. on the 6th, since S.W.

Weather very changeable, with frequent, and at times, heavy rain.

Rain fallen, .605 of an inch.

CHARLES HENRY ADAMS.

WILSON & OGILVY, 57, Skinner Street, London.

THE
LONDON MEDICAL GAZETTE,
BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, JANUARY 20, 1843.

LECTURES
ON THE
THEORY AND PRACTICE OF
MIDWIFERY,

*Delivered in the Theatre of St. George's
Hospital,*

BY ROBERT LEE, M.D. F.R.S.

LECTURE XIII.

On the Structure of the Placenta.

I HAVE placed upon the table before you a healthy human placenta, which was expelled from the uterus a few hours since in natural labour, with the membranes and umbilical cord. When the child had breathed I applied a ligature firmly around the cord two inches from the navel, and the pulsations of the umbilical arteries, which corresponded with those of the heart of the child, immediately ceased. Another ligature was then tied around it a little nearer the placenta in the usual manner, and the cord was divided between the ligatures. If the cord had been divided between the placenta and the first ligature, without a second having been applied, only a small quantity of blood—not enough to fill a cup—would have flowed from the open umbilical vessels. This fact proves that there is no direct communication between the arteries and veins of the uterus, and the umbilical arteries and vein: the placenta was still adhering to the uterus. Had these vessels anastomosed in the placenta, the blood of the mother would have escaped when the cord was cut before the detachment of the placenta and the application of a ligature. The second ligature which you see still around the placental end of this cord was not required to prevent the maternal blood flowing out of the umbilical vessels, for a single drop would not have escaped had it been left untied. This simple experiment may be repeated any number of times

without risk to the mother, and, invariably, with the same result, which is not the case when the blood-vessels of the uterus and of the umbilical cord are injected. But injections have likewise proved that the blood-vessels of the mother do not communicate or anastomose in the placenta with the foetal blood-vessels. In the second volume of the Medical Essays and Observations, published by a society at Edinburgh in 1732 or 3, Dr. Monro says, p. 129, "Having fixed a pipe into one of the iliac arteries of a woman three or four months gone with child, and having tied the other iliac artery and the veins, I pushed through the pipe fine oil of turpentine, which is a liquor which easily goes from the extreme arteries of any part of the body into the corresponding veins. I continued this injection till all the vessels of the womb, both arteries and veins, were in hazard of bursting, and till all the gentlemen present agreed that a sufficient quantity and force were employed. Not one drop of this oil was found in any branch of the umbilical vessels or in the fetus, though it was searched for most carefully." From this experiment, and from other remarks in this essay on the Nutrition of Foetuses, I think it must be admitted that Dr. Monro possessed a knowledge of the foetal circulation in the placenta, and was fully aware that the greater part, if not the whole blood sent out by the umbilical arteries, is poured into the umbilical veins by anastomosing canals. "For liquors," he observes, "thrown into the umbilical arteries towards the placenta require less force to make them return by the umbilical vein, and, when injected with the same force, they return more quickly than they do into the vein corresponding to any other artery of a child when the artery is injected."

In the umbilical cord attached to this very recent placenta, the two arteries and the vein, especially the latter, are seen through the transparent sheath distended with foetal blood. The cord enters the placenta near its centre, and the branches of the umbilical

arteries and vein are seen through the amnion and the chorion spreading out the like roots of a tree, and sinking into the placenta. There is nothing to be seen on the foetal surface of the placenta, except the umbilical vessels covered by the amnion and chorion reflected from the cord, extending outward to the circumference, and disappearing in the mass at different distances from the centre. If size coloured with vermilion were injected into one of these umbilical arteries, after they were emptied of their blood, it would fill all the branches of the two arteries in the placenta, and would probably flow into the extreme branches and trunk of the umbilical

vein. Or if the injection did not pass from the arteries, which is sometimes the case, all the ramifications of the umbilical vein could readily be filled with size, coloured yellow from the trunk of the vein. In this preparation of the placenta which is now exhibited to you, all the ramifications of the foetal vessels have been minutely injected; the arteries with red, and the veins with yellow; and the whole organ appears to consist of nothing but these red arteries and yellow veins covered on the uterine surface by the outer layer of the decidua, and on the foetal side by the amnion, chorion, and the inner layer of the decidua. (See fig. 1.) The

FIG. 1.

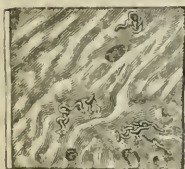
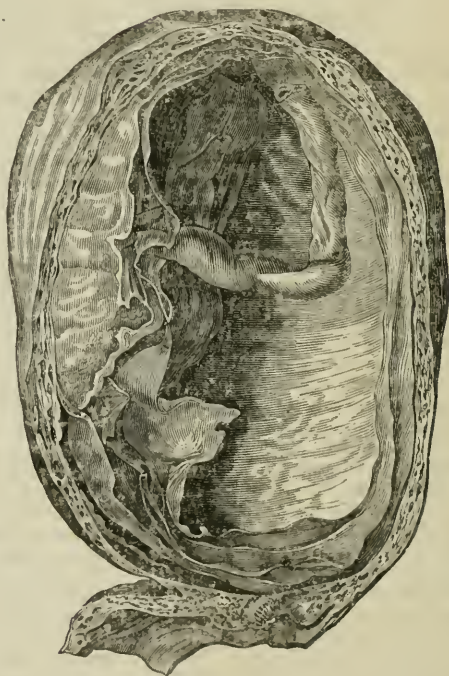


FIG. 2.

In figure 1 is represented a section of the gravid uterus, placenta, and membranes; the uterine sinuses are filled with injection; the membrana decidua is seen passing between the uterus and placenta, the chorion and amnion passing over its foetal surface, and the foetal vessels of which the placenta is composed, situated between the placental decidua and chorion.

Figure 2 represents the venous orifices in the lining membrane of the uterus where the placenta had adhered, and the decidua arteries.

whole mass of the placenta consists of the ramifications of the vessels of the umbilical cord, covered on the uterine side by the placental decidua, and on the inner surface by the other membranes; the branches of the umbilical vessels being covered on both sides by membranes. But there are large vacant spaces or cavities in the interstices of

the vessels, which all freely communicate with one another, which have been called the cells, or the cellular or spongy structure of the placenta, and have been compared, both by William and John Hunter, to the cavernous substance of the penis. As these great vacuities do not resemble cells in any other part of the body, and as some of the most

recent and accurate anatomists deny that there are cells in the placenta, to avoid all ambiguity I shall call these spaces between the vessels the cavernous structure of the placenta. Professor Owen and Mr. W. Jones both think that this is the best term which I could employ to designate these cavities.

When describing the veins of the gravid uterus I was not aware that the similarity which exists between them and the corpora cavernosa penis had been pointed out by any anatomist but the following remark proves that Dr. Monro, primus, was fully acquainted with the peculiarities of the uterine sinuses:—"The sinuses are much of the same texture with the cells of the spleen, or rather of the corpora cavernosa penis, being membranous cavities communicating with each other, and having numerous arteries spread on them, whose lateral branches open into the cells, from which veins go out to be joined to other veins that return the blood from the other parts of the womb."

The placental decidua, as Dr. Hunter states, receives no vessels demonstrable by the finest injections from those of the navel-string. When a placenta is finely injected, he observes, and then steeped and frequently washed in clean water, it is evident that the umbilical injected vessels do not reach even the outer surface of the placenta, but are only seen through a membrane (decidua) which covers all that surface. It is rough or ragged, like the inner surface of the uterus, to which it adheres, and, by its whiteness, becomes very distinct from the vascular injected part of the placenta, over which it is spread. It becomes still more distinguishable when the part is put into spirits, which render it more opaque and whiter. In this preparation, which will be handed round, the umbilical vessels were very successfully injected, while the placenta adhered to the uterus. A section has been made of the placenta and uterus, from the fundus to the cervix, and they have been separated partially from one another. The placenta is seen to be nothing but a mass of foetal vessels covered on the inner surface by the amnion and chorion, and on the outer surface by the decidua, which is white and opaque, and totally destitute of injected vessels. Not a particle of injection has passed into the vessels of the uterus across this membrane. But I shall show you another preparation of the same kind, in which the result was entirely different, and appearances were seen which might have induced me erroneously to believe that a direct communication did exist between the foetal and uterine vessels in the placenta. While the placenta adhered to the uterus I introduced a pipe into the umbilical vein, and injected it without using much force.

The injection not merely filled all the ramifications of the foetal vessels, but all the interstices of these vessels in the placenta, and all the veins of the uterus. I shall hand round another preparation in which precisely the same effect was produced, though very little force was employed in passing the injection into the umbilical vein. The same thing occurred to Dr. Hunter once, and he was not misled by the appearances. From what is now known of the structure of the foetal vessels in the placenta, it is impossible to believe that the injection in these preparations flowed through natural channels from the umbilical vessels into the uterine veins. The injection must have forced its way into the cavernous structure of the placenta, (though I confess my inability to demonstrate this in these preparations) through the coats of the foetal vessels, and afterwards escaped through the venous openings in the decidua into the veins of the uterus. Almost all physiologists now coincide in the opinion of Dr. Hunter with respect to the termination of the umbilical arteries in the veins, and believe that the foetal blood is confined to the umbilical vascular system. "Much has been said or supposed," he observes, "about a communication between these vessels and those of the uterus; but from all the experiments I have made upon the human subject (and upon quadrupeds likewise) it plainly appears that the umbilical arteries terminate in the umbilical vein, and not in the vessels of the uterus; and that the blood passes from the arteries into the veins, as in other parts, and so back to the child again. If the placenta be whole in all its substance, which is seldom the case, and its blood-vessels be pretty well emptied of their blood, any subtle injection thrown into an artery will fill the arterial system through the whole substance of the part to an amazing degree of minuteness, and return so freely by the veins so as to fill them very generally and equally. In the same manner the whole umbilical system may be filled by injecting the vein, the fluid returning from the vein into the arteries. In both these experiments the injected fluid is confined to the umbilical vascular system, none escaping at the external surface of the placenta, neither by large nor small orifices, whether of veins or arteries."

Professor Weber and Mr. Dalrymple have both carefully investigated with the microscope the capillary vessels of the placenta. Dr. Willis, in his translation of Wagner's physiology, has given an account of Weber's researches with these figures I now show you, the accuracy of which had been denied by Dr. Reid, of St. Andrew's, but has been completely confirmed by Mr. Dalrymple, in the last volume of the *Medico-Chirurgical Transactions*. "The whole mass of the placenta," observes Mr. Dalrymple, "is made

up of the innumerable ramifications of the arteries terminating in beautiful coiled and convoluted capillaries, which form tufts or bouquets at various intervals: these finally become continuous with the minute origins of the umbilical vein, which return to the foetus in the same direction that the arteries left it, viz. coiled and twisted in the umbilical cord. The vein and its branches are greatly larger than the arteries and their subdivisions, but less numerous. All the vessels, besides their own proper coats, are enclosed in a fold of chorion. As the minute branches of the arteries terminate in serpentine and very intricately coiled capillaries, so are these latter divided into masses, or tufted and bouquet-like processes, clothed by the prolongations of the before-mentioned membrane. This membrane (chorion) constitutes (by division into processes) true villi, and each villus contains a tortuous capillary, which, entering by the arterial side, leaves it by the venous: as the vessel leaves the villus, there is a slight but manifest increase in size. A single tuft or collection of villi, well injected, and laid flat under an inch or half inch object glass, appears at first sight an inextricable confusion of curiously-contorted capillary vessels; but separated by needles, and a single villus detached or expanded beneath a higher magnifying power, this seeming confusion is reduced to order, and the true anatomy of these vessels explained. The membrane enclosing the vessels and capillaries is studded on the exterior by nucleated cells, resembling an irregular epithelium. The enclosed tufts or capillaries, though covered by a common membrane, are no where so closely bound together as to constitute one undivided, though really double vessel, as described by Dr. Reid (Ed. Med. and Surg. Journal, 1841); and the "blunt extremities" adverted to by that gentleman appear to me to be the villi of the placenta. The villi are not connected together by cellular tissue, but the mass of the placenta is made up by the vascular divisions and subdivisions, and by the tufts or bouquets of capillaries. The interstices are everywhere free, and communicate with each other. There are no distinct or defined cells constituting a maternal portion of the placenta. The uterine surface of the organ is covered by the decidua, which does not appear to enter further than between the lobules, and the depth to which it thus penetrates varies with the extent of the fissures. Stretching from the foetal to the interior surface of the placenta, are irregular semi-fibrous bands, more firm towards the foetal surface, and nearly disappearing towards the decidua. These appear to give firmness to the spongy mass, and, to a certain extent, support the tufts of villi. The bouquets of capillaries are found in all parts

of the placenta, but are more numerous at the uterine surface, where they will be found close beneath the decidua. Upon the decidua surface may be observed, thickly scattered, certain papillæ, somewhat obtuse and blunted, about a line and a half in length, which seem to be constituted by innumerable coiled and minute capillaries. On comparing these observations and the accompanying drawings, we cannot help being struck with the very strong resemblance they bear to the plates in Wagner's Physiology, as copied from Weber. Dr. Reid denies the correctness of Weber's drawings, as represented in the "*Icones Physiologicæ* of Wagner."

Let us now turn this recent placenta over, and bring the convex uterine surface into view, and endeavour to comprehend the nature of the connection which exists between the placenta and the uterus, and the manner in which the maternal blood circulates in the placenta.

You observe the different appearance which this side of the placenta presents from the other. If the coagulated blood which partially covers and adheres to it be wiped off, you will perceive that it has an irregular lobulated appearance, and that it is completely invested with the outer layer of the decidua. Arantius was, I believe, the first who noticed this fact, and thus describes the placental decidua, in his work entitled "*Libellulus de Formato Foetu*, 1664." "*Hanc multiplicem vasorum texturam*," he says, "*chorion quidam appellevere non nulli vero totam membranam, quam quidem chorii nomine non ineptè appellabimus, quamvis per totam ejus circumferentiam, ut in brutis, vasa minime dispersa habeat, illas tamen suprema pars, quæ carni connectitur maximis est prædita distributionibus. Hæc autem membrana pars, quæ vasorum robori per cœvum uterinum distributorum, est destinata eidem carni altera ex parte propria quasi membrana atque indumentum evadit, ut inter hanc et uterum media sit reposita.*"

If you keep this surface of the placenta convex, you can see numerous small tortuous arteries in the decidua filled with maternal blood. Their open mouths are visible at the surface of the membrane, and they soon disappear, after making, as John Hunter describes, "a twist or spiral turn upon themselves." These decidua arteries soon terminate in the cavernous structure of the placenta, but they do not anastomose with the foetal vessels. Through these small tortuous canals in the decidua, the maternal blood flows from the arteries of the uterus into the cavernous structure of the placenta. It is easy to inject these decidua arteries from the uterine arteries, and to demonstrate their continuity, though their structure is different; the uterine arterial tissue not being continued into the decidua arteries.

At an early period many anatomists asserted that there were numerous small vessels which passed between the placenta and uterus during pregnancy. In 1759, Røderer, from whose work the second figure of the preceding engraving is taken, accurately delineated these decidual arteries. He calls them "*Anguillulæ arteriosæ*," and says that he saw these arteries in the chorion covering the placenta, or the placental decidua. "In ipsam membranam ovi filamentosam rete ita continuatur, ut ipsa vascula retis uterini pergant non interrupta in simile membranæ filamentosæ rete, stipatumque sit rete filamentosæ ubi plenum est rete uteri, rarum rete filamentosæ, ubi rarum rete uteri."

He adds, "Nulla autem arte efficere potui, ut ex superficie placentiæ uterina flatus in ipsa vasa umbilicalia placentiæ promoveatur: sed in sola membrana filamentosa, tum qua ad velamenta pertinet, tum qua ad superficiem placentiæ uterinam, istud vasorum rete subsistit, sine ullo saltem apparente, cum vasis umbilicalibus commercio."

Røderer appears clearly, from the following sentence, to have observed that the injections which he threw into the uterine arteries passed through the decidual arteries into the cavernous structure of the placenta; but he supposed that it did so by lacerating their coats. "Velut venarum materies passim, ruptis parietibus, sibi in spongiosam placentiæ substantiam vicem paravit, ita rubrum etiam materiam, arteriis effusum, in illa spongiosa substantia passim vidi. Facile autem disrumpi arteriolas liquet, tunica videlicet tenui et molli, præcipue versus internam uteri substantiam factas."

In 1751, five years before the publication of Røderer's work, the decidual arteries were seen and injected by John Hunter, and their connection with the uterine arteries, and their termination in the cavernous structure, demonstrated. This discovery of the origin and termination of the decidual arteries enabled him to establish the important physiological doctrine of the maternal circulation in the organ. No account, however, was given of these vessels, and of the maternal circulation of the placenta, till the publication of Dr. Hunter's Engravings of the Gravid Uterus in 1774. Mr. Hunter's Paper on the Structure of the Placenta, in which there is a most interesting account of the manner in which the maternal circulation in the placenta was discovered by him, in 1754, was not presented to the Royal Society till 1780.

To Noortwyk the honour is due of having previously discovered the communication between the cavernous structure of the placenta and the veins of the uterus. In 1743, he published a work, entitled "*Uteri Humani Gravidæ Anatome et Historia*," in which he has not only described, but accurately represented in two engravings, the venous apertures

in the lining membrane of the uterus, and the corresponding venous apertures in the placental decidua, as seen in the dissection of a gravid uterus in the latter months. In the first engraving you perceive the openings in the lining membrane of the uterus, similar to those which are seen in figure 2. In the second engraving the oval-shaped openings in the decidua are figured. The blood-vessels of the uterus were injected from one of the iliac arteries, and the appearances observed on opening the uterus are thus described at page 9:—

"§ 6. Mirabar, cum structura partium reclinationem illam negaret: causam indagando, vidi 1º, chorion per veram cellulosa substantiam uteri cavo adcreta esse, quam separando deprehendi molissimam, cujus ope univ[er]sa ovi superficies utero cohærebat quam posset proxime, ita ut, elevata matricis substantia, nulla divisionis nota pateret sensui: sed dorso cultrileniter depresso ovo, vel eodem inter hoc et uterum reciproco, facillime solvebatur istud vinculum.

"2º. Eandem hanc cellulosa separanti vasa occurrerant numerosa per totum ambitum, ex chorio in uterum porrecta, impleta. Accuratius examen docuit, internam matricis superficiem poros habere mediocris magnitudinis, multos, aliquantulum tamen ab invicem distantes (vasorum officia); quibus proportionatæ dimensionis canales extra chorion emergentes, per dictam cellulosa progressi, inosculabantur, sic ut vas responderet vasi, et communis materiæ cylindrus utrumque impleveret. Vasa hæc alia majora, alia minora erant, in univ[er]sum talia, ut tenuiorem, crassioremve aciculam, quædam etiam caput aciculæ maxime (*de knop van een grooten baakerspell*) facile admisissent. Rursus nonnulla recto tramite uterum subibant, nonnulla postquam brevi prius spatii juxta uteri superficiem reflexa processerant, erantque ultima hæc non rotunda, sed compressa quasi et complanata. Omnium etiam memoratorum vasorum cum matrice unio levissima vi solvebatur. Membrularum vero summa tenuitas venas esse arguebat.

"3º. Majores quidam trunculi intra chorii substantiam notabiliter dilatabantur, sinuum specie duplo ut minus capaciores, talesque per longitudinem transversî pollicis ibidem decurrerant, inde ramosi chorio profundius immergebantur.

"4º. Tandem et hoc meminerim, quod inter separandum uno loco exiguum quid liquoris crassiusculi albicantis supra chorion effusum fuerit (cremorem lactis non inepte referebat): et quod.

"5º. Ovum totam exacte impleverat matricem, in ipsam quoque ejusdem angustiam exporrectum, quam protracta eò ovi convergentis (si ita vocare liceat) appendix, similiter (ut supra) nexa, tenebat.

"§ 7. Sic passim ovum utero hæsisse

vidi; attamen circa placentam nexus iste quodammodo differebat; quantumvis enim et hæc pari ratione, mediante cellulosa, vasisque, adligaretur utero, cellulosa eo loco nonnihil validior erat, adhesio itidem aliquantum tenacior, nihilominus vix multum majore molimine solubilis. Vasa insuper numerosiora videbantur, quibus extra placentam emergentibus, atque in uterinos poros insertis, manifesta oculis communicatio patebat inter uteri et placentæ vasa: et hæc iterum variam diametrum monstrabant, in genere non multum ampliora, quam quæ circa chorion descripsi, pariterque terrerrima.

"2°. Sed ad radicem placentæ, ubi hæc per orbem supra chorion terminatur, cellulosa illa in ligamentosas lacinias collecta nexum denuo parum firmiorem exhibebat. Hic vasa conspiciuntur copiosissima, capacissima, adeo insignia, ut eorum quædam digitum pueri potuissent recipere; veri venosi sinus, mollissimis tenuissimisque tunicis conflati, breves; ex quibus mox rami intra placentam immergebantur, longe minores, magna parte admodum exiles: quod patuit, dum in sinus tales, excussa, quam continebant, materie, introspicerem postea. Rami hi ex fundo sinuum, quæ placentæ innascebantur, procedebant, ea utcumque ratione, uti Vena cavæ, innata hepatis, intra hujus substantiam ramos demittit. Fundus sinuum, solidiori membrana præditus, albicabat: cætos inde ramos materia injecta subierat; quin ino (quod postmodum aperto ovo, et Amnio separato, vidi) in ipsam placentæ basim, qua chorio insidet, locis quibusdam manifesta, penetraverat."

But, besides the arteries of the decidua, there are veins, as Noortwyk has described, by which the maternal blood is conveyed from the cavernous structure of the placenta into the veins of the uterus, and by which the maternal circulation of the placenta is completed. If you look at the margin of this recent placenta, and the spaces between the lobes, you will observe some large oval-shaped or irregular apertures with smooth thin transparent edges in the decidua. If pressure is made upon the placenta, maternal blood oozes through these from the cavernous structure, which still contains a large quantity of blood. Some of these openings are so irregular that they are evidently lacerations, but there are many others of different sizes which are obviously natural apertures, and all these communicate with the venous system of the uterus, by corresponding openings in the lining membrane, which have been represented in figure 2, copied and reduced from Roderer's sixth Plate. If you introduce a blowpipe into one of these openings, the air thrown in will pass chiefly around the edge of the placenta, and will escape at a distance from other

similar openings in the decidua. The edges of these apertures in the decidua adhere to the edges of the smooth semilunar or valvular shaped venous apertures, above represented in the lining membrane. The inner membrane of the uterus does not extend from these openings into the cavernous structure of the placenta. The placental decidua and lining membrane of the uterus are structures essentially different from one another during the whole period of pregnancy, and to demonstrate this the microscope is not required: as Mr. Lawrence said, respecting the nerves of the uterus, the "microscope is not required to discover this. It is seen much better with the naked eye, than with any magnifier." I am much astonished that any anatomist of reputation, should have been misled so far by the microscope, as to conclude that not only the uterine decidua, but the decidua reflexa, is nothing but the altered mucous membrane of the uterus, and that the mucous membrane of the uterus escapes every time a woman is delivered.

If injections be thrown into the blood-vessels of the gravid uterus, they frequently, but they do not invariably, pass through the venous apertures of the decidua into the cavernous structure of the placenta. I now shew you two preparations of the gravid uterus, in which, though the blood-vessels were injected with the greatest care, and by those skilled in the art, little or no injection passed into the cavernous structure of the placenta. In this gravid uterus, at the full period, not a particle of injection has entered the placenta. In this, another uterus, which I shall hand round, and which was taken from the body of a woman who died suddenly of cholera, in the eighth or ninth month of pregnancy, and was injected at my request by Sir Astley Cooper, under the most favourable circumstances, you see that a very trifling quantity indeed of the injection has passed into the placenta, and there is no appearance of any blood-vessel crossing between the inner surface of the uterus and the placental decidua. This also happened to Dr. Monro, secundus, who was misled by it, as appears by the following letter from Dr. Cullen to Dr. Hunter, written probably about 1760, and published in the 1st vol. of Dr. Thomsou's Life of Cullen:—

"It will give me the utmost pain to find, upon any occasion, that it is not in my power to do you any service you may desire of me. Happily this is not the case at present. About the beginning of this winter, Dr. Monro, jun., laid before the Philosophical Society a great number of anatomical preparations and drawings. I was present at the beginning of the meeting, but finding it impossible for me, during the short time of our meeting, and amidst a number of other persons, to take any satisfactory view

of these preparations, I left the meeting before he began his demonstration, and when I received your letter yesterday, I was nowise in a condition to give it an answer. But I found no difficulty in applying myself to Dr. Monro himself, and after talking upon the subject, I even let him know the reason of my inquiry. The result of all is this. Among other preparations, he produced to the society a preparation of a gravid uterus, and a drawing from it. The purpose of both was to determine the nature of the communication between the uterus and placenta. He says, that when he heard you upon that subject, you were of opinion that certain arteries of the uterus pass the internal surface of the placenta, and pour out their blood into the cellular substance of it, to be taken up from thence by the proper vessels of the placenta. He says, he was then, and has always been of a different opinion, but to determine the matter more certainly he made this preparation. He had injected the vessels of the uterus with coloured wax, the arteries with red and veins with green, and left those of the placenta without any injection. This injected uterus he cut longitudinally, so as to obtain a section and distinct vein, for some length of the uterus and placenta as applied to each other. And from this view he thinks it is evident that *no sensible vessels pass from the one to the other*. The vessels of the uterus appear to be perfectly well filled, and in the extremities of the veins the coloured matter is found mixed, but not a *particle of it in the placenta*. Many arteries of the uterus open upon its inner surface, forming many convolutions there, and swelling out on that inner surface, but still manifestly confined without any appearance of their entering the placenta. He observes that as so many arteries reach the inner surface of the uterus on separating the placenta, several of these arteries may be torn, and give some occasion to the opinion you have formed: but that such a preparation as the present is best fitted to determine this fact, and very strongly supports his opinion of it."

It would, however, be erroneous to conclude, as I did ten years ago, from similar failures and other circumstances, that the maternal blood does not enter the cavernous structure of the placenta by the decidual arteries; and flow back by the decidual veins, into the venous system of the uterus, as first demonstrated by John Hunter. It would be equally erroneous to deny, which has often been done, that fibrous tumors of the uterus are destitute of blood-vessels, because injections frequently stop short at the point where the arteries and veins of the uterus communicate with the blood-vessels of these tumors. The repeated examination of the uterus and placenta in their natural state, under water, and when

the uterine vessels were filled with injection, having led to no conclusive and satisfactory results respecting the connexion of the placenta and uterus, it occurred to me, soon after the publication of my paper in the Philosophical Transactions in 1832, that the most likely means of discovering the real connexion of these parts would be to examine the placenta when the vessels of the uterus were filled with their own blood, and coagulated. On the 24th May, 1833, such an opportunity presented itself through the kindness of Dr. Girdwood, of Paddington, and that no doubt might exist in the minds of anatomists as to the accuracy of the description, I requested Mr. Lawrence carefully to examine the parts with me, and draw up an account of the appearances which we observed. It was my wish immediately to have published the memorandum, containing an account of these results, but I was dissuaded from doing so by Mr. Lawrence, who thought it better to wait until another opportunity should occur of verifying the observation, and still further elucidating the subject. The facts were, however, immediately made known to Sir Astley Cooper, Professor Owen, Mr. Mayo, and many other members of the profession, who felt interested in the subject, and they were thus stated about a month after in the Review of Velpéau's Embryology, in the MEDICAL GAZETTE. "About a month ago, before the preparation at the College of Surgeons was examined by Messrs. Stanley and Mayo, we understand that Dr. Robert Lee, in order as far as possible to obviate every fallacy, examined a gravid uterus in the eighth month, in which he had previously coagulated the maternal blood. He was able to satisfy himself, and Mr. Lawrence, who was present at the examination, that coagula of the maternal blood extended from some of the openings in the lining membrane of the uterus, into canals formed by the deciduous membrane on the margin of the placenta. These vessels or channels in the decidua could be traced only a short distance along the margin of the placenta, and between the lobes."

Memorandum of appearances observed, on the 26th of May, 1833, in the examination by Dr. Lee of a portion of the uterus with the placenta still adhering to it, said to have been taken from the body of a female, who destroyed herself by drowning in the ninth month of pregnancy:—

The membranes of the placenta were slowly and cautiously detached from the surface of the uterus, to which they retained their natural adhesion. They separated under gentle dragging, leaving the surface of the placenta smooth, soft, whitish and entire, except at some points towards its circumference, where the adhesion was firmer, and a passage of the vessels, containing coagu-

lated blood, from the uterus to the placenta, was observed. As the coagula were considerable, we supposed at first that they had proceeded from partial detachment of the placenta and membranes, but we soon found this supposition to be erroneous. The placenta, indeed, adhered more firmly at these points. The coagula, which exceeded in size a large writing quill, were continued through openings of corresponding magnitude into the uterus. When air was impelled into these openings, the internal surface of the uterus was raised, apparently by the distension of the large uterine veins. On the other side the coagula were continued into vessels running on the surface of the placenta, or of the membranes at its circumference. When these, which were extremely thin in their coats, were slit open, the internal surface was smooth, like that of a vein. They were large where they commenced at the uterine orifices, but soon lessened, so that they could not be followed more than an inch or two. Their termination was obscure, and its precise mode was not ascertained. Although the placenta adhered to the uterus, at the points where these vessels entered it, more firmly than in other situations, their texture was so delicate that it separated even here without the employment of much force.

In separating one half of the placenta from the uterus, the passage of vessels between them was observed at four or six points.

On the surface of the placenta, in the rest of its extent, there were numerous small tortuous vessels; and similar ramifications were seen on the surface of the uterus. We could not see any open orifices belonging to those vessels on the surface of the placenta, nor ascertain that they derived their origin from the uterus.—I am, sir,

Your obedient servant,

W. LAWRENCE.

OBSERVATIONS ON SEMINAL AND OTHER DISCHARGES FROM THE URETHRA.

WITH ILLUSTRATIVE CASES.

BY BENJAMIN PHILLIPS, F.R.S.

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[Continued from page 456.]

CASE II.—I was consulted by W. R., aged 35, who was suffering from the effects of frequent involuntary discharges from the urethra. The account he gave of himself was as follows:—Some years before the period when he consulted me, he went to Russia, and, being much addicted to women, he there formed an intimacy with a woman of rank,

whose propensities in that direction were still more decided than his own. They lived together for many months, and indulged in the most unbridled excesses, until his health began to suffer. Becoming sensible of the consequences of this course of life, he determined to break off the connection, and set off for England. This resolution he carried into effect. For a time he lived carefully, and his general health improved; but with amended health came desires for a new attachment; and as this was not difficult to accomplish, a connection was formed, and with the same results as in Russia. The connection continued; change of air was tried; vows of greater continence were made and broken; when ultimately the connection terminated, and with broken health, and some suspicion of pulmonary disease, he was again set free.

It was at this time I saw him. He was about the middle stature, but somewhat emaciated. The digestive functions were much deranged; the voice was faltering; the expression of countenance was indicative of great mental depression, and it appeared that his presages were of the most gloomy character. His respiration was quick, his pulse irritable, his food indigested, his bowels constipated, his urinary organs irritable; he was obliged to make water twice or three times in the night, and in the morning a number of granular bodies could be detected in it. He slept ill; sometimes he was awoken by distressing dreams, sometimes by involuntary discharges. I found further that although he had ceased to see the lady—his former mistress—a daily correspondence was kept up; if possible, more injurious than their former close connection. Every letter of hers he read induced a seminal discharge—every letter he wrote to her had a like effect.

My first request was to break off the correspondence. This was done, and with much advantage. Still he did not usually go to stool without pressing out of the vesiculae seminales a certain quantity of spermatic fluid, and the granular particles were rarely absent from the urine. It seemed a useless waste of time to try to regulate the functions which were deranged, while the cause of that derangement still continued. I therefore passed a bougie along the urethra, and I found that though sensitive everywhere, it was especially so at a point in the neighbourhood of the prostate. For the two following days I introduced the bougie, and let it remain in the canal for a quarter of an hour, with a view to accustom the canal to the presence of a foreign body, before the caustic instrument was introduced. I then applied the caustic cautiously, and no great inconvenience was complained of. The caustic was applied about two o'clock; he

remained on the sofa until five; when, instead of taking a light dinner at home, as he was ordered, he adjourned to his club, which was a few doors off, and, whether from exposure to cold, or other cause, he had no sooner sat down to table than he fainted. The nearest medical man was sent for, and when I arrived I found him pretty well again. He made water, and was put into a warm bed, and the next morning was in his usual state, but there was a considerable discharge from the urethra; and from the moment that discharge abated, the spermatic discharge abated also; and in the succeeding three weeks the discharge had only occurred twice—once in the first week, and once in the next fortnight. When every hope of all going on well was strongest, pulmonary symptoms became more decided. He was sent to Hastings, but the climate of that place had no power to arrest its progress. He returned, and died, as nearly as may be, free from his original source of trouble.

CASE III.—A. B. a young man of twenty-four, was brought to me by Mr. Joseph, in a state of settled melancholy. He complained of pain in the groins, the perineum, and the loins, complete relaxation of the genital organs, a swimming and noise in the head, and a perfect inability to use the slightest effort. I at once saw, from the history of the case, and the cast of his countenance, that seminal discharges or excesses were at the bottom of his sufferings; but the probabilities were in favour of other modes of excitement than sexual intercourse. I charged him with masturbation, and, with a little hesitation, he confessed it. He had carried it to a very considerable extent, oftener twice than once a day, when at last he observed that no complete erection took place. Recourse was then had to such books as are advertised daily for the cure of sexual debility. He submitted to the treatment recommended by their authors so long as his money held out, but he derived no benefit from it. The dark pictures drawn in their publications of the consequences of this pernicious habit still further impressed his mind with a conviction of impotency. He abstained lately from masturbation, but the frequency of the discharges was not lessened by it. By night and by day they still occurred, and, to use his own expression, "life seemed leaking away."

A bougie was carefully introduced: a very sensitive point of the canal was discovered, about an inch in front of the neck of the bladder. Upon this point the caustic was immediately applied. He did not complain of much pain from the operation, and at once proceeded to his ordinary occupation. I saw him at the end of four days from the

application of the caustic, when his spirits were much improved. He had a thin discharge, which had come on in the course of the evening of the day on which I used the remedy; it had been increasing up to that day, but it seemed to have attained its acmé. When he first made water there was some smarting, but it soon abated. From this time I did not again see him, but I learned from Mr. Joseph that he rapidly recovered, and completely; and that he is at present quite free from any disorder of the sexual organs.

CASE IV.—E. G. aged 24, a medical man, consulted me some time since for a similar affection; but altogether his case was the most severe I have ever seen. His person was much emaciated; his voice faltering; his respiration hurried; his heart palpitating; his stomach unable to bear any but the simplest food; the abdominal cavity tormented with flatulence, and his bowels constipated.

He stated, that during his school-days he had addicted himself to masturbation, and that for some time his excesses in this respect were great, but that ultimately he acquired the power to resist the inclination, and afterwards it was only resumed occasionally. But the irritation which had been set up continued, and induced nocturnal emissions, which had amounted, when I first saw him, to sixteen in four weeks. Their effect was most distressing; they produced respiratory trouble so intense in its character as to resemble a paroxysm of asthma. The trouble to the circulation was not much less remarkable, and the voice was broken and faltering. After twenty-four hours these severe symptoms abated to some extent, so as to allow him to attend to his business. It was not without much effort that he could allow me to examine the urethra, so much had his moral courage been prostrated. However, it was at last accomplished, but although a bougie was introduced without any approach to violence, syncope followed. Beyond the curvature the pain became excessive and unbearable, and the instrument was withdrawn. On the second day from this examination he came to have the caustic applied, but in the interval there had been an involuntary nocturnal discharge. I applied the caustic, and the discomfort experienced on this occasion was much less than upon the simple examination on the last. In a fortnight he came to me in improved spirits, and stated that he had felt himself so much better that he had undertaken the situation of assistant to a practitioner in the country. He stated that the improvement had been in every respect remarkable, and during the fortnight he had had only two emissions, and that the after trouble had been much less severe. He was anxious that the caustic should be applied a

second time, before he went into the country. To this I objected, because it was impossible at that time to estimate the effect of the first. I advised him, if necessary, to come up in a month. He did so, and was in all respects much improved, but he said he did not feel himself equal to the knocking about of a country practice, and that riding hard was particularly unsuited to him. During the month there was an increased vigour of the sexual organs, and there had been only three involuntary discharges. It was evident that, though much abated, the evil still existed, and I therefore determined to make a second application of the caustic. On this occasion none of the inconvenience of the first introduction of the bougie was experienced; the morbid sensibility was much blunted, and the remedy was easily applied. From this time I can give no account of the case. I did not know his address at the time, nor any of his friends, and I have consequently made no enquiry about him. But as there was reason to suspect disease of the chest, it is very possible he may be dead. Still, so far as it goes, it is interesting, as shewing the very formidable consequences of such discharges, as well as the striking effects of lunar caustic as a remedy when they are involuntary.

CASE V.—A young man was placed under my care for disease of the rectum, characterized by occasional intense irritation, followed by hemorrhage, sometimes alarming in extent. An examination shewed a tumor as large as a small walnut, which, though attached within the external sphincter, was protruded under this effort. This tumor was erectile in structure, very rough in its surface, and in every crevice were numbers of ascarides; and it was through their agency that the irritation seemed to be developed, so as to provoke hemorrhage. When this irritation was great, and this was at least once in twenty-four hours, it induced a discharge of spermatic fluid. In this case the treatment was clearly marked out, and there was a fair ground for supposing that when the irritation within the rectum had ceased, the spermatic discharges would also cease. A ligature was placed around the tumor, and the irritation within the rectum was cured: but although what was conceived to be the cause of the spermatic discharge had ceased, the discharge had not. Neither, in two months afterwards, had it shewn any disposition to do so; for in the previous twenty-eight days it had happened thirteen times, sometimes during sleep, sometimes during the day. Whatever may have been the original exciting cause, it was now clear that some one still existed. The canal of the urethra was examined, and great morbid sensibility was detected beyond the curvature. Caustic was at once applied over the part; it occasioned spasmodic contraction

of the rectum, which continued for two days, and then disappeared. On the two or three following occasions of passing the urine, there was a good deal of smarting, and there was rather a profuse thinish discharge, at one time streaked with blood, which did not completely disappear until the eleventh day.

From the time of applying the caustic until the ninth week, there had been only two involuntary discharges; and when I saw him, not long ago, he was quite free from disease.

CASE VI.—**T. G.**, aged 50, had long resided within the tropics, where he had suffered from frequent attacks of dysentery, and other varieties of intestinal disturbance, which ultimately caused very distressing inconvenience in the rectum, in the form of piles, and afterwards fissure of the anus. Means had been employed to relieve this state of things, but with no great success; and after some time, spermatic discharges, unaccompanied by much excitement, and almost always involuntary, occurred to complicate the case, and distress the patient. In this state he arrived in England, when I was consulted. I at first directed my attention to the disease of the rectum; the bowels were carefully regulated, the internal piles were much improved, and after a time ceased to give any trouble, under the daily pressure of a bougie, smeared with mercurial ointment and extract of belladonna, and rather unexpectedly the fissure got well also.

During the course of the treatment no sensible improvement was observed in the affection of the sexual organs; but when the trouble in the rectum was got the better of, he went to Brighton, where he stayed some weeks. Gradually he became sensible of increasing sexual energy, and a decreasing frequency of spermatic discharges. No special treatment was directed upon the urethra, and he has been free from any uneasiness in that quarter for several months.

I have been unwilling to occupy more space than was absolutely necessary for the bare illustration of the subject, and therefore it is that I have given the details of only six cases, and that principally for the purpose of more directly calling the attention of the profession to the matter. At the risk of being considered tedious, I will, however, again direct attention to the more important points connected with these affections.

1st. It is necessary that the habits which have led to those discharges should be discontinued; any means will be powerless if the practice be persevered in.

2dly. When the primary cause of the affection has ceased, it is necessary to examine the urethra with an exploring instrument; and for the purpose I prefer an elastic catheter. The point where the pain is most acute must be accurately noted. The instrument must then be passed on carefully until urine passes along it. Observe how far it has penetrated, and having noted this, you must arrange your caustic apparatus so that it shall not reach so far by an inch, because the prostatic portion of the canal is not commonly implicated in the irritation. The point upon which the caustic is to be applied is, as near as practicable, about the region of the orifices of the ejaculatory ducts.

It may be asked, why pass the instrument on to the neck of the bladder at all, and why state that an inch in front of the neck of the bladder is the point beyond which the caustic instrument shall not penetrate? Why, again, the spot where acute pain is indicated, during the passage of the bougie, may not be regarded as the proper place for applying the caustic? In many persons the urethra is very sensitive, and the patient complains so frequently, that a little difficulty is experienced in deciding with that test; but when you have ascertained that from the orifice of the urethra to the neck of the bladder is seven inches and a half, and when you further find that in the passage of the bougie the most acute pain was experienced at a little more than six inches from the orifice, you can then, with much confidence, cauterise the space between the sixth and seventh inches, satisfied that the orifices of the ejaculatory ducts will not escape. It may be thought by some persons that all those precautions are unnecessary: this may be true: but off-hand surgery I dislike; and if in one case, by the neglect of such attention, I cauterised the neck of the bladder, and in another case applied the caustic entirely in front of the seat of mischief, my conscience would not acquit me of blame.

The foregoing precautions having been taken, the caustic must be exposed, and slightly revolved along the floor of the urethra for half a minute, without fear of harm, and rarely does it excite much pain—very rarely, indeed, does the patient complain of it. A few days ago I passed a bougie very gently along the urethra of a young man, but

it produced syncope. When the caustic was applied a few days afterwards, the morbid sensibility was immediately blunted. Usually a smarting is experienced when the urine passes along the urethra, after the caustic is used, but it rarely continues troublesome over twenty-four hours. Before that time, usually, a thinnish discharge comes on, which may be profuse, and may be, though very unfrequently, streaked with blood. After a few days it begins to abate, and by the time it has ceased the change for the better in the patient's condition seems strikingly manifest. It is always necessary to guard the patient against impatience, because four or five weeks will, in some cases, pass, before the beneficial effects of the remedy become clearly evident; and this is the more necessary, because he looks with intense anxiety to the result; and sometimes it happens that a single discharge, after the application of the caustic, will dash the cup of hope from his lips, and induce the most gloomy forebodings. I may again repeat what I have said before, that I have never applied too much caustic, but I have more than once failed by using too little; and much experience is necessary to apply the proper dose. However, it is better to err on the safe side, until experience shall have given confidence in the use of the remedy. I have scarcely ever had recourse to a second application until five or six weeks have passed, and given the assurance that the first has been insufficient.

Since the publication of the first part of this paper, I have been painfully impressed with the conviction that the evil is more widely spread than I had before conceived, and that it will not be largely alleviated by the means I have adopted for advocating the use of a particular remedy. Almost every morning I have had several applicants for relief, but with two or three exceptions they have been either medical men or medical students. The pages of a strictly medical journal do not meet the eyes of the great mass of sufferers, and they rarely apply to medical men for relief, from a feeling of degradation which, they conceive, attaches to their situation, and I apprehend that, in a large number of instances, they do not resort personally to those irregular practitioners to be found in all parts of

after-death appearances presented by the eruptive febrile diseases likewise closely resemble those that are met with in fatal cases of burn. In both these instances, as has already been proved with regard to burns, and, as is well known with respect to the affections just mentioned, nothing is more common than to find the mucous membrane of the stomach and bowels congested or inflamed, the follicles being enlarged and prominent; together with evidences of meningitis, whether consisting in the deposition of lymph or the effusion of serum, with more or less congestion of the cerebral substance. Inflammation of the bronchial mucous membrane is also of very frequent occurrence, and inflammatory congestion of the tissue of the lungs in its different stages is by no means rarely met with. Thus, then, the lesions that occur as a consequence of the eruptive febrile disease are very similar, in many respects, to those that are found in fatal cases of burn.

The causes that have usually been assigned for the frequent if not constant complication of severe burns with congestions and inflammations of internal organs and tissues, are, a repercussion of the blood from the surface to the central organs, or a sympathetic connection between the skin and these organs and tissues.

With regard to the first of these, repercussion of the blood from the surface to the central organs of the body, we shall find that it cannot exist as a permanent effect of burns; for in these injuries, the integuments (unless they be destroyed in their whole thickness), actually contain more blood than natural; as is proved by the reddened and inflamed condition of the true skin, and by the swelling of the subcutaneous cellular membrane; so that in reality, as soon as the immediate shock of the accident is over, the internal organs ought to contain less blood than natural, the application of heat to the skin acting as a derivative, were it not for the operation of another set of causes that will presently be adverted to.

That a sympathetic connection exists between different tissues, and between individual tissues and entire organs, in their morbid actions, is an established fact; but it is no less certain, that the word "sympathy" is too often used in a loose and vague sense to account for

consecutive phenomena of disease, the cause of which may be explained more correctly in other ways.

It has been proved by the experiments of Ducroz, and of Breschet and Becquerel, that if the skin of a rabbit be coated over with gum-lac, or a mixture of resin and salt, the animal soon dies from suppression of the cutaneous perspiration, with symptoms of derangement of the functions of the brain or lungs. We should, therefore, expect that, in burns, and those diseases, such as the eruptive fevers already mentioned, in which secretion is at once arrested over a large extent of the surface of the skin, a condition of the system analogous to that produced in the experiments referred to would result.

Now cutaneous transpiration being suddenly and completely arrested over the whole of that portion of the surface of the body that has been exposed to and injured by the action of the fire, it does not appear at all improbable that a compensating secretion, as it were, should be attempted to be set up from the mucous membranes, more particularly the gastro-pulmonary, which is the most extensive, as well as the one that seems most intimately connected, both anatomically and pathologically, with the skin, in order to relieve the system from the accumulation of that large quantity of fluid which is, in a healthy condition of that tissue, eliminated by the skin; and which in burns does certainly not pass off by the kidneys, the urine not being perceptibly increased in quantity or altered in quality. Mr. Curling, in his very interesting paper on Ulceration of the Duodenum consequent upon Burns, published in the *Medico-Chirurgical Transactions* for the present year, accounts for the very frequent occurrence of this lesion, by supposing that Brünner's glands endeavour "by an increased action to compensate for the suppression of the exhalation of the skin, and that the irritation consequent thereon often leads to inflammation and ulceration." This appears to me a highly probable supposition, and is indeed the only way by which we can explain the occurrence of ulceration confined to the duodenum. At the same time, however, I think that we are justified in extending this explanation; and that we must account for

the occurrence of a general congestion of the gastro-pulmonary mucous surfaces, not so much to any reperussion of the fluids, which, as has already been stated does not take place as a permanent effect, the cutaneous textures actually being in a state of inflammatory congestion, and thus containing, especially when the burn is superficial, more blood than natural, as to the additional influx of blood, which is the necessary consequence of an increase in the activity of the secretory and exhalant functions of this as of all other mucous membranes, and which is increased by the accumulation in the system of that fluid which ought to pass off by the skin.

When we consider that the average quantity of the cutaneous secretion amounts, in a healthy adult, to eleven grains in the minute, or to between two and three pounds in the twenty-four hours (Seguin), we cannot suppose that this secretion should be suddenly arrested to the extent of one-half, or even more, as it necessarily must be, when a corresponding portion of the skin is injured by the action of caloric, without its being absolutely necessary that one of two things should happen; either that an antagonistic secretion, to a corresponding amount, be set up from some other tissue or organ, or else that a degree of plethoric distension of the whole vascular system, giving rise to congestions of internal organs and membranes, and effusion into serous cavities, take place. Now the first does certainly not occur in most cases of burns to a sufficient extent. We do not, in these injuries, find the urinary secretion increased in quantity; and although the mucous membrane of the intestines does, perhaps, in many cases, attempt to relieve the system by an increased secretion—perhaps, as Mr. Curling has suggested, from Brünner's glands, giving rise to liquid stools—yet this is not to an amount sufficient to maintain the proper balance of the circulating fluids. The second consequence must, therefore, result; the system becomes hyperemic, congestions ensue in the mucous membranes, partly from the condition that is common to all the tissues, and partly from the increased afflux of blood that is always attendant upon increased functional activity of a part. The brain and lungs, as well as the other large organs, occa-

sionally become engorged, effusion of a more or less bloody fluid takes place into the different serous sacs, the arachnoid amongst the rest, and death ensues from causes that are themselves the immediate effects of suppression of the natural secretion of the skin. By this means we may account for the occurrence of death in the earlier period of burns, before there has been time for inflammation to be lighted up, and also for the fatality of those injuries of this nature that are extensive but superficial—burns of the first and second degrees; in which cases the functions of the part of the skin injured are entirely and suddenly arrested.

These remarks on the effect of the suppression of the cutaneous secretions do not apply merely to cases of burn, but also to all those diseases of the skin in which the functions of that tissue are more or less perfectly suspended. We have already seen that the morbid appearances found after death in fatal cases of the eruptive fevers closely resemble those produced by burns. Now, may not these be originally attributable to the operation of the same cause? with the exception, however, of those cases in which the disease has invaded internal organs by metastasis, or in which the morbid actions have extended themselves by continuity of tissue, both of which are of comparatively rare occurrence, and cannot interfere with the general rule that secondary visceral diseases are in burns, and most generally in eruptive fevers, the result of arrest of the functions of the skin, and of consequent retention in the system of the perspirable matter.

May not also the deranged condition of the digestive organs and liver, which is so commonly met with in chronic cases of disease of the skin, as in eczema, impetigo, lepra, psoriasis, &c. be in reality, in many instances, the effect of diminished functional activity of this tissue, rather than the cause of the disease in question—the consequence, and not the cause, as it is generally supposed to be, of the cutaneous affection? If this, which can only be ascertained by a long series of carefully-conducted observations, should prove to be the case, how materially will it not change the received opinions as to the etiology and the present mode of treatment adopted in many of these complaints.

The practical bearing of the facts that have been mentioned in the first part of this paper, on the constitutional treatment of burns, is sufficiently obvious. If, as has been stated, the immediate cause of the occurrence of internal congestions and consecutive inflammations be the suppression of the cutaneous transpiration to a greater or less extent, and consequent retention in the system of a large quantity of fluid that ought to pass off by the skin, we should, in order to prevent the supervention of these secondary diseases, endeavour to set up such a drain on the system as would, as rapidly as possible, compensate for the arrest of the secretions of that tissue, and have a tendency to restore the balance of the circulation, disturbed by the accumulation of an unusual quantity of fluid in the system. This must either be effected by the employment of diuretics, so as to induce an increased action in the kidneys, by guarded blood-letting, carried to such a length as the powers of the patient would allow; or else (what would be better, if time and the nature of the case would admit of it) by encouraging the process of suppuration as quickly as possible. It is a question whether diuretics or blood-letting might not be of advantage in preventing internal congestions in extensive *superficial* burns, in which the suppurative process could, probably, not be established, the injury not being sufficiently deep for that purpose. On the other hand, when the burn extends to a greater depth, if there be no immediate occasion for the loss of blood, from the actual occurrence of visceral mischief, the process of suppuration should be hastened and maintained, consistently with the powers of the patient, as a useful drain, and as, perhaps, the best mode of relieving the system from the pressure of the fluid retained within it.

As it has been shewn that the brain and its membranes are the parts that are most frequently affected by congestion and consecutive inflammation in cases of burn, we should, more particularly during the earlier stages of these injuries, when the complications referred to are most to be dreaded, watch carefully for the occurrence of any symptoms, however slight, and be most active in our measures whenever any of these shew themselves, as the progress of the inflammatory congestion and effusion is

usually so rapid in its course, when once set up, that no time should be lost if we want to save the patient. That this may often be accomplished by prompt venesection or leeching, and the usual treatment adopted in encephalitis, there can be no doubt. A case in point occurred about four years ago, under Mr. Samuel Cooper, at University College Hospital, in a child named Jane Elbel, six years of age, who was admitted for an extensive burn, to the first, second, and third degrees, of the upper part of the trunk, arms, and face. Symptoms of encephalitis, followed by violent convulsions, and complicated with an extensive bronchitis, set in a few days after admission: for these she was bled twice in the jugular vein, and treated in an active antiphlogistic manner, and notwithstanding the extensive injury for which she was admitted, and the serious nature of the affections with which it was complicated, she recovered perfectly, although there can be little doubt that had energetic and prompt measures not been had recourse to, a fatal result would have occurred. A somewhat similar case is reported in the *Lancet*, by Mr. Thomas: it occurred at the Middlesex Hospital.

Next to the brain and its membranes, the lungs should claim our special attention, both on account of the frequency as well as of the severity of the secondary inflammations of those organs; which, although of not quite so common occurrence as lesions of the encephalon, are yet, in all probability, more frequently the cause of death, being usually of a graver nature. It behoves us especially to be on our guard whenever any appearances, however trifling, of oppression in the breathing, or, of the blood not being duly aerated in its passage through the lungs, are observed. In these cases we must not wait for the unequivocal signs of active sthenic, idiopathic pneumonia, or bronchitis, to shew themselves, as the symptoms of these diseases are, in burns, as in all other severe injuries, necessarily masked or rendered latent by the general disturbance of the system; but we must at once, on the supervention of the above-mentioned symptoms, proceed to the examination of the chest; and, if we encounter the usual signs of pneumonia, such as dulness on percussion, mucocrepitant or crepitant rhonchus, or total absence of all rhonchus with broncho-

phony, as active a mode of treatment as the circumstances of the individual case will admit of must be had recourse to. And if the views that have been advanced with regard to the cause of these secondary visceral diseases be correct, they would warrant us in the adoption of bolder depletory measures than are usually had recourse to in similar cases; although we must carefully bear in mind the necessity of not reducing the patient's strength below a certain point, as he would have, in severe burns, the stage of suppuration to pass through, in which a great call is made upon the powers of the system.

Although I believe that, of the two dangers, the chance of a fatal termination occurring from inactive treatment in the early stages of visceral inflammation, consecutive on burns, or from too great a depression of the powers of the system at a more advanced period, from too energetic depletory measures, the first is the most to be apprehended, as it is much easier to build up the strength, though much reduced, than to check the course of inflammation, particularly of the brain and lungs, without due depletion; yet this, however, is only when it occurs during the earlier periods of the injury; for it would clearly be impossible to employ active measures of this kind in cerebral inflammation, or in pneumonia occurring during the more advanced stages of burn, when the system has already been greatly lowered by irritative fever and profuse discharge.

With regard to the abdominal viscera, although congestions of them are very common, yet they probably would not of themselves prove fatal, were it not for the occurrence of perforating ulcer of the duodenum, which, as has been already stated, was found in one out of every 3·6 cases of death that occurred during the second period.

Mr. Curling, in the paper already referred to, remarks, that in those cases in which there is good reason to suspect ulceration of the duodenum, there being pain on pressure in the right hypochondrium, together with uneasy digestions, and perhaps bloody vomiting and stools, we should have recourse to the application of leeches to the part, if it be not injured by the burn, to small doses of hydrargyrum cum creta, and to the mildest nourishment.

This plan of treatment may probably be effective in arresting the disease, if

it be employed in the earlier stages, but if the ulceration has advanced to such an extent as to occasion bloody vomiting or stools, our prognosis must be very unfavourable, although not necessarily hopeless, as Mr. Curling states that there is a preparation in the London Hospital, of a cicatrized ulcer of this part of the intestinal canal, that was taken from a patient who died of exhaustion eight weeks after the infliction of the burn. And in the table appended to this paper is mentioned a somewhat similar case—a patient having died of pneumonia, on the 30th day after the accident, in whom a recently-cicatrized ulcer was found near the pyloric end of the stomach.

Hæmatemesis and bloody stools also occasionally occur in patients suffering from severe burns, without death ensuing; probably, in the majority at least of these cases, the bleeding takes place from the congested mucous membrane, and not from any ulceration in the duodenum, or elsewhere in the intestines or stomach.

As my only object in speaking at all of the constitutional treatment of burns has been to point out the frequency of the occurrence of visceral inflammations in these injuries, and the necessity of attacking them energetically,—points which, it appears to me, are not universally recognised—I shall abstain from making any remarks on the treatment of the suppurative stage of these injuries, or on the supervention of hectic or exhaustion; as the principles that should guide us in these are laid down in most systematic works, and are familiar to all.

On taking, then, a general review of the constitutional treatment of burns, it may be stated that the first object should be to relieve the system of the abnormal quantity of fluid that must have accumulated in it in consequence of the arrest, to a greater or less extent, of so important a secretion as the perspiration. This may be accomplished either by the administration of diuretics, by guarded blood-letting, or by encouraging the process of suppuration, if it be deemed prudent to wait until this be established. Secondly, any appearance, however slight, of the supervention of inflammation in the organs contained within the head, chest, or abdomen, should be watched with the utmost anxiety, and treated, if it do occur, as

actively as the circumstances of the case will admit. Thirdly, the process of suppuration should be maintained or arrested with a due regard to the state of internal organs, and the condition of the powers of the system.

OBSERVATIONS
ON
CORPORA LUTEA WITHOUT CON-
CEPTION.

To the Editor of the Medical Gazette.

SIR,

IT appears to me a matter of no earthly importance in practice whether the corpus luteum be formed by a development of the inner layer of the Graafian vesicle, as Professor Baer maintains, or by a development of the outer layer, as Professor Owen and Dr. Martin Barry state, or between the layers, according to Dr. Montgomery, or external to both, as Dr. Lee argues, and I believe satisfactorily proves, by his preparations, and by his figures in the *Medico-Chirurgical Transactions*. I think it is a mere waste of time, however, to fight any longer about this, for it is very certain that no agreement will take place on the subject at the present time: the smoke and din of the discussion must pass away before the truth can be perceived. It is, however, a subject of the deepest importance, not merely to accoucheurs, but to anatomists, and to all professional men, that it should speedily be determined what are the characters of corpora lutea resulting from pregnancy, and how they are to be distinguished from those produced by menstruation, sexual excitement without sexual intercourse, blood within the Graafian vesicles, and thickening and puckering of the coats of the Graafian vesicles from disease. Without some better test than we yet possess for distinguishing true from false corpora lutea, it appears to me that the moral character of every unmarried woman, whose body is subjected to anatomical inspection after death, is liable to be exposed to the most unjust and foulest suspicions. Suppose, which is not improbable, that a corpus luteum had been found in one of the ovaria of Lady Flora Hastings similar to that which was found in the left ovary of a young woman who

died in St. George's Hospital during a fit of hysteria, and who had never been pregnant, and in which ovary a small circular aperture was observed in the peritoneum, which opening communicated with a cavity in the substance of the ovary, which was surrounded with a soft, yellow, puckered substance of an oval shape, and which is preserved in the museum. It would have been, I presume, requisite for those who inspected the body of Lady Flora Hastings to have made a report of such an appearance, if it had been observed. Had such an appearance been described in the report published after her decease, her reputation at this time, instead of being pure as the snow now falling around us, would probably have been in nearly the same condition as the lamplighter's wife, whose case has been so circumstantially recorded by Dr. Paterson, of Leith, and whose speculations on the case cannot have failed to excite general disgust.

These observations have been made in consequence of the discussion which has been going on respecting the structure of the corpus luteum, and the *practical tendency* which the question is now likely to take.

Dr. Allen Thomson states that corpora lutea may be formed in the ovaria of women without sexual intercourse. In the article *Generation*, contained in the *Cyclopædia of Anatomy*, vol. ii. p. 450, he observes, "In what has now been said regarding the corpus luteum, that body has been described as it is formed in the place of a vesicle which has been burst after fruitful sexual union; but we may remark that the same series of changes always follows the rupture of an ovarian vesicle, from whatever cause that may have proceeded. It is now well known that in some animals the rupture of ovarian vesicles and subsequent changes take place without sexual union, merely from the state of heat or venereal excitement of any kind; while in others these phenomena are never observed but as accompaniments to conception. The sow and mare belong to the first of these classes of animals. The rabbit, bitch, ewe, and cow, may be mentioned as examples of the second, as also is generally the case in the human female; but in woman, as in some other females, various circum-

stances induce us to believe that the rupture of ovarian vesicles, and the formation of corpora lutea in their place, *occasionally happen without sexual union*, from all those causes which excite greatly the sexual organs; and we are not therefore inclined to admit the presence of a corpus luteum, taken alone, as a certain sign of sexual union having occurred; though, conjoined with other signs, the presence of one or more corpora lutea, or the appearance of ruptured vesicles, must be regarded as good presumptive evidence. In some of those animals in which vesicles frequently burst without sexual union, there are occasionally very many corpora lutea in the ovary, so as to alter completely its form and disguise its natural structure, as may frequently be seen in the sow.

“Now the existence of corpora lutea, we have already stated, in the sow (observed by Sir E. Home), and even, we are inclined to hold, in the human female, is not necessarily a proof of sexual union having previously occurred, since the rupture of the vesicles may have followed simple excitement of the sexual organs, and might therefore take place either with or without the male; and in the second place, the occurrence of cavities or vesicular membranes within the corpora lutea is by no means a proof that these cavities are new, or forming ovarian vesicles; on the contrary, there is every reason to regard them as unnatural, or the product of disease.”

In the letter which Dr. A. Thomson has written in the last number of the *MED. GAZETTE*, respecting the appearances observed in Dr. Paterson's first case—viz. the lamplighter's wife—he says: “I am confident that the peculiar structure usually regarded as characteristic of the true corpus luteum is so well marked in it, that it would be impossible for any one to confound it with a mere clot of blood, or to distinguish it from the true corpus luteum found in the ovary of a gravid uterus.”

I now trust Dr. Thomson will state clearly, for the benefit of the profession, what are the differences between corpora lutea resulting from mere sexual excitement in women without intercourse, and this corpus luteum which he considers so positively to have been produced by conception—although no

ovum was found in the uterus. I am also anxious to know whether Dr. Thomson has seen or known any instance in which conception took place when the fallopian tubes were in such a diseased condition that it was impossible for an ovum to pass into the uterus, as was the case with this individual, and where there was no ovum found in the uterus; also, whether he or Dr. Paterson felt so confident that it was a true corpus luteum, and that pregnancy had taken place in consequence of criminal intercourse with another man, that they were induced to state this at the trial of the lamplighter; and whether, if the lamplighter was hanged, this evidence ought not to have preserved his life. If neither Dr. Thomson nor Dr. Paterson appeared at the trial to offer this evidence, I think they were guilty of a neglect of moral and professional duty. But these are new and interesting questions in physiology and medical jurisprudence, to the solution of which I have no doubt Dr. Thomson will produce many interesting facts, and that he will be able to answer them in a satisfactory manner.

From an examination of the coloured representation which has been given by Dr. Paterson of this corpus luteum, taken from the lamplighter's wife, and which I presume is correct, although it does not agree with the description given of it by him, and none of the other figures agree with the description given of them, “I would certainly have set it down as a clot of blood within a diseased Graafian vesicle, and as bearing none of the marks of the corpus luteum described by authors.” An eminent anatomist (who has paid some attention to this subject) to whom I shewed the figure in the *Edin. Med. and Surg. Journal*, came to the same conclusion, and said—I never saw a true corpus luteum which had the least resemblance to this; I see no yellow matter in it, either inside or outside. Before Dr. Paterson began to write on corpora lutea I never heard or read of lymphic matter and reddish grey-coloured fibrinous masses being found in the centre of true corpora lutea. Nothing of this sort is mentioned by De Graaf, Roderer, or W. Hunter, or any other author of reputation who has since written on the corpus luteum. He has stated what is completely erroneous, when

he asserts that his description coincides with that of the best authors. Such appearances as he has described lead me very strongly to suspect, as others have done, that three at least out of the five corpora lutea described by him were false, and not true almost lutea; and this suspicion is strengthened into complete conviction when I find that in three of the uteri out of the five there was no ovum found within the uterus. Why were the ova wanting?

When Dr. A. Thomson publishes his description of the appearances presented by human corpora lutea without sexual union, and shows how they differ from true corpora lutea, I would feel obliged to him to state what he actually meant when he said that a cavity existed in the interior of Dr. Paterson's fourth corpus luteum. Dr. Paterson says, "this statement is erroneous, as its centre was filled up with a reddish grey-coloured fibrinous mass." Dr. Reid, of St. Andrew's, certainly reconciles this flat contradiction, but in a novel and most incomprehensible manner, by affirming that Dr. A. Thomson was perfectly correct in stating that there was a central cavity in this corpus luteum; "though there can be no doubt, as any one may satisfy himself by looking at the preparation in my possession, that there can be none, and that Dr. Thomson meant only to say that the true texture of the corpus luteum occupied the surface of the body only, and did not extend through the centre."

If I understand this rightly, it means that Dr. Thomson was perfectly correct in stating that there was a cavity where there could be no cavity, and that Dr. Paterson was perfectly correct in saying that Dr. Thomson's statement was erroneous when Dr. Thomson had committed no error. Who will not feel wonder, after these apparent discordances are thus made so beautifully to harmonize, that four opinions should exist about the corpus luteum!

I am, sir,

Your obedient servant,
SCRUTATOR.

Jan. 16, 1843.

MEDICAL GAZETTE.

Friday, January 20, 1843.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

LONDON CHURCHYARDS.

It must have struck many students of antiquity that the chief mode of disposing of the dead employed since the commencement of the christian era is a medium between two other ancient methods.

Embalming was an attempt, and often a successful one, to give a ghastly permanence to the remains of the dead: while burning converted the festering corpse into a few ashes fit to occupy the slender urn—the most elegant of monuments!

But embalming, though an antidote to decay, was by no means a talisman against the rude hands of the curious; and in the middle ages, medicine, and consequently commerce, found an object in these singular remains.

"The Egyptian mummies, which Cambyses or time hath spared, avarice now consumeth. Mummy is become merchandise; Mizraim cures wounds, and Pharaoh is sold for balsams."*

Now, burying occupies a middle space between these methods; the body, neither unnaturally preserved nor hastily dispersed to the winds, gradually sinks into its mother earth, and in a score of years cannot be distinguished from the surrounding dust.

Attempts, however, are often made, by means of leaden or stone coffins, to give to modern burial the antiseptic power of ancient embalming; while, on the other hand, it has been proposed, by putting lime into the coffin, to make the process of destruction almost as speedy as when corpses are consumed

* Sir Thomas Browne's *Hydriotaphia*.

in the pyre. It must be confessed, that both these deviations from usage destroy the characteristics of burial. The permanent coffin indefinitely prolongs the state of decomposition, and instead of preserving the corpse, as relatives fondly imagine, must frequently detain from its kindred dust a loathsome flood of putrefaction.

Hence a leaden coffin, instead of being considered a mark of respect, should rather be ranked among those remnants of a false taste, which are discarded as civilization advances.

The use of lime to hasten decay is still more destructive of those feelings on which burial is founded, and which it tends in its turn to foster; it seems a mode in which instinct is entirely sacrificed to economy, and far more fit for a speculator in cemeteries than a relation or a friend. We should hardly have thought it necessary to mention it at all, had not Colonel Fox constantly asked the witnesses before the Committee on this subject,* how this plan would be liked by the public. The answer, with rare exceptions, was, that it would be extremely disliked. Mr. Harker, an undertaker, gives another objection, namely, that lime produces so liquid a state of the body, that the men can scarcely carry the coffin, from the flow and the odour.—Report, p. 105.

This notable scheme would not be endured by the middle or lower classes, and would scarcely be proposed to the upper ones.

Let us, therefore, be content with interments in wooden coffins; and instead of taking means to accelerate decay, let bodies be buried in situations where room enough may be found for generations of the dead.

The chief point of the evidence, the one which ought to be most insisted on,

and most diligently spread abroad, is the testimony to the noisome effluvia proceeding from our London cemeteries.

Mr. John Irwin, a house-painter, was at work in St. Sepulchre's, when a clearing-out of the vault was going on, performed by four men and a boy. "They were taking baskets after baskets of, I may almost say, decomposed matter; but it does not come to that, it was arms and legs, and flesh, in a dried state, something like russet-leather."

These dried or drying remains, in their passage from the vault to the bone-house, diffused so mephitic an odour, that the witness was taken ill, and left work for three days.

But the grand store-house of decomposition and its consequences appears to have been Enon Chapel in St. Clement's Lane. Thousands of corpses were huddled together in the vault of this Stygian temple, until the effluvia penetrated through the boards above, and were perceptible to the smell. Nor were the effluvia the only evidence of what was going on below. Insects like bugs in shape and carriage, but with the unpleasant addition of wings, flew about the chapel by hundreds, and showed, too clearly, that Enon Chapel was rather for the dead than for the living.

Twelve thousand bodies were buried in this lurid cave, according to the supposition of the witness Pitts; while the exasperated pamphleteer, whom we cited in our last article, declares, from an inspection of the minister's register, that the whole number buried "during seven principal years of interment" was only 3503. To make the thing complete, a Sunday-school was held over the noisome receptacle; so that during more than half the Sunday the minister repeated the cruelty of Mezentius:

Mortua quinetiam jungebat corpora vivis!

* Report from the Select Committee on improvement of health in towns, &c. Effect of interment of bodies in towns. Ordered by the House of Commons to be printed, June 14, 1842.

Mr. W. Burn, a master carman, gives equally striking evidence to the state of this unrivalled burying vault. On occasion of the enlargement of a sewer under the chapel, he was employed to cart away sixty loads of rubbish. The greatest portion of this consisted of putrefied bodies; no doubt, in various stages of decomposition. Some would be totally reduced to mould; a part was bones; and a part was in a fresher state.

"There were some men repairing Clement's Lane; they asked me to give them a few baskets of rubbish, which I did, and they picked up a human hand, and were looking at it, and there were crowds collected; it did not appear to have been buried probably a month; it was as perfect as my hand."—Report, p. 14.

Mr. W. Burn has no doubt that the sewer had been previously made use of to get rid of superfluous bodies, and thus clear the vault for fresh customers. Some months before giving his evidence, he had carted away several loads of this kind of earth from the Savoy burial-ground: "I do all sorts of work, sometimes night-emptying, and that is beautiful in comparison to this."

The utter irreverence for the remains of the dead which such proceedings must engender is too obvious to need comment; and it is remarkable that in another instance which we are about to add to those we quoted last Friday, reality has again been forestalled by Shakspeare. We will place the sentences of the poet and the grave-digger in juxtaposition.

"Did these bones cost no more the breeding, but to play at loggats with them?"—*Hamlet*, Act V. Sc. 1.

"I have seen them play at what is called skittles; put up bones, and take skulls and knock them down; stick up bones in the ground, and throw a skull at them as you would a skittle-ball."—Evidence of E. C. Copeland, Report, p. 71.

In a word, the evidence that bodies are buried in London close to the surface of the ground, that the steams of corruption constantly pollute the air, that vaults emit the same hideous blasts, that even leaden coffins are no certain safeguard against these exhalations, is overwhelming. Few practitioners of physic, we imagine, will ask for evidence that these odours are unwholesome; the fact that they exist is sufficient to call for a reform.

The only serious obstacles to the change are pecuniary ones. Many dissenting chapels have been built on speculation, and the income of their ministers arises, in great part, from burials. Some compensation must, therefore, be granted to the owners of these profitable resting-places, a point which appears to have been omitted in Mr. Mackinnon's Bill. This omission is the *cheval de bataille* of the incensed patriot, who runs on for ever after the following fashion:—

"Yes! it was next to sacrilege to impair in the least the comforts of a single clergyman; but, though a hundred dissenting ministers were ruined, it would call for neither compensation nor compassion. Sir, is this justice? You must have learned from Locke, that 'the nature and office of justice is to dispose the mind to a constant and perpetual readiness to render to every man his due.'" &c. &c*.

This defect will doubtless be supplied in the bill to be introduced by government; and the patriot may then be happy, though the air of London be spared this infection.

We may then hope to see cemeteries entirely free from the revolting indecencies practised in the metropolis; cemeteries where bodies shall repose undisturbed for at least half a century, and shall not be touched till they are undistinguishable from the clod which encompasses them.

* Health of Towns, &c., p. 65.

PROTESTANT SISTERS OF CHARITY.

THE late Dr. Gooch, in a letter with which he enriched the first volume of our journal, proposed the introduction of Sisters of Charity into England. "They should be not mere nurses and religious instructors," he says, "but a set of religious female physicians." This has not been accomplished, nor attempted; but an establishment of nurses, who tend the rich and poor (the latter gratuitously) now exists in London. An account of the system is contained in a small pamphlet lying before us.*

A Society was founded in 1840, whose object is to provide all classes with nurses of a superior stamp to those commonly to be met with. The donations of rich patients are to support the sisters for the benefit both of rich and poor. Before a candidate can be enrolled on the list of sisters, she undergoes a probation of two months in a public hospital, where her knowledge is increased, and her powers of endurance tested. Much as knowledge is desirable in a nurse, good feeling ranks still higher;† and the object of the society is to procure sisters who will devote themselves to their duties from charity in the highest sense of the word, rather than from the hope of gain." I would select two or three women," says Dr. Gooch, "not superannuated servants in search of a quiet livelihood, who are thinking of nothing but how to make money with the least trouble, and who would apply, or be recommended in crowds for such a purpose; but women originally and habitually of a higher order, young

enough to learn, yet old enough to be sick of worldly vanities; in short, with strong sense, a good education, and something of the devotee, (there are many such.)"

Could such women be found, the institution would assuredly be successful. But let us descend from the heights of what we wish, to the flat level of what we can, and proceed to detail the rules.

The sisters receive a stipend, and during the intervals of their engagements reside at home, (in Devonshire Street, Bishopsgate,) where they employ a part of their time in nursing the sick poor of the neighbourhood.

They are dressed in a uniform, and "in no case wear gold ornaments or jewellery, lace, embroidery, feathers, or artificial flowers." Their engagement is entered into for three, five, or seven years; but if a sister wishes, for some good reason, to resign her office sooner, she is to give three months' notice. The pamphlet contains the names of twelve sisters; but as the list in the copy before us has two erasures, and five manuscript additions, we may presume the present number to be fifteen. The sisters are forbidden to accept any remuneration; the sums paid being sent to the board of management.

They are also charged most earnestly to hold sacred the knowledge which, to a certain extent they must obtain of the private affairs of any household or individual they may attend.

Abstinence from alcohol during the night is enjoined in the following manner:

"When sitting up at night, they are to take either tea, coffee, or cocoa, unless infection prevail, and the medical adviser suggest the necessity of something else."

The want of good nurses was an aching void in society; whether this association will fill it up, remains for time to determine.

* A short explanation of the plan now in operation for establishing nursing sisters in England. London, 1842.

† "We find, as far as credit is to be given to the celestial hierarchy of that supposed Dionysius, the senator of Athens, the first place or degree is given to the angels of love, which are termed Seraphim; the second to the angels of light, which are termed Cherubim." — *Bacon on the Advancement of Learning*.

HOMŒOPATHIC QUACKERIES OF THE DAY.

To the Editor of the Medical Gazette.

SIR,

IT was my intention in the autumn of last year to offer, through your journal, a few remarks upon the eagerness with which, in the present age, every species of quackery is received, however preposterous its absurdities. An announcement in the daily journals of an article advertised to appear in the Quarterly Review of December, entitled, "Brandy and Salt — Homœopathy — Hydro-
 pathy," induced me to postpone my observations, in the expectation that the article alluded to would fully effect my purpose, and that the public mind would thereby be disabused of the folly of seeking the philosopher's stone in "mines so barren," or rather, I should say, so productive of rubbish. That article has appeared; but, able as it must be acknowledged to be, it does not seem to me to have adopted the line of reasoning most likely to open the eyes of those who are prone to run after novelties without investigating their soundness. Perhaps, indeed, the manner in which the writer in the Quarterly Review has handled the absurdity of the "brandy and salt" system may convince the thinking class of the community, and that the death of that *specimen of nonsense* may be expected to result from it. Perhaps, too, the exposure of one fallacy may lead some to suspect the validity of others; but I cannot help feeling that the subject of homœopathy requires to be handled in a manner somewhat different from that adopted by the writer in question. In his introduction of homœopathy, for instance, he has described it as "having pretensions of a more lofty character than that of brandy and salt;" and although some may understand the meaning of the reviewer in this and his following remarks, yet their ambiguity appears likely to mislead the generality of readers, and induce them to suppose that its claims on their notice are something more than "pretensions." It assumes an appearance of reasoning and science; and this is the clap-trap by which so many are ensnared. The fallacies, indeed, of this supposed science he has exposed by a few striking metaphysical arguments, and has then left it in its pristine profundity; doubtless under the

impression that a word is enough for the wise. For the thinking class of mankind the pulling out of one or two foundation-stones of any supposed science, and exhibiting its internal rottenness, would be sufficient to confirm them in the assurance that a fabric based upon such materials must fall; and when homœopathy was first practised in this country its fallacies were so exposed by sound reasoning and argument, in some excellent papers which appeared in your journal and other medical publications. Possibly, had the channel through which these observations were communicated been of a more extended and general nature than that of a purely medical publication, many victims of this quackery might have been saved, and much of the practical misery which, in my belief, it has occasioned, might have been prevented. This opinion has been considerably strengthened by an observation made to me by a very sensible though susceptible person, who, in the early career of homœopathy, was a disciple of Hahnemann, that, "had he then seen the medical arguments which had since convinced him of its fallacies, he should never have been led away by its plausibilities." If, therefore, my remarks, and the facts I am about to state, should be acceptable to your journal, and generally approved by your readers, it would be a question whether it might not be advisable to bring them in some other way more immediately before the public. After shewing the class of persons who are most frequently the victims of such delusions, and the manner in which the credulity even of superior minds is worked upon by their authors, and the implicit and uninquiring faith which these persons bestow upon their deceivers, I hope to illustrate the truth of my objections to the pretended science by facts which will prove its lamentable practical results.

Here I must strongly protest against the supposition that medical men are generally jealous of new discoveries, or bigoted to the course adopted by their predecessors in the art; for we could mention many instances of the readiness, nay, eagerness, with which medical practitioners have accepted suggestions for the increase and improvement of their professional knowledge. Our journals are every week filled with the remarks

made upon the various discoveries incident to the science of medicine—their utility pointed out, and their fallacies, either of theory or practice, exposed. For illustrations of this readiness of the faculty to admit scientific improvements, even in matters where prejudice was strong, and even where success was doubtful, if laid before them in an honest, open, and candid manner, we need only refer to the introduction of Dr. Jenner's wonderful discovery of vaccination, and the more recent application and use of the stethoscope; as well as the administering of new medicines, such as Morphia, Veratrina, &c. May we not, therefore, call upon the public to believe, that had there been any real excellence in homœopathy the medical profession generally would have given their patients the full benefit of it?

The importance of any pretended remedy for disease exerts its influence on that great majority of the public who are necessarily incapable of judging of medical evidence, because they are ignorant of the extraordinary workings of the human mind, which exhibit themselves to medical men only, not in unhealthy individuals alone, but often in those who are apparently free from disease. The medical man alone witnesses in full force the varieties in the sensibility of different individuals, as evinced particularly in their power of bearing pain, or of concealing it to serve a purpose. Experienced medical men are alone capable of ascertaining the existence or non-existence of disease amongst the variety and complexity of symptoms which distinguish particular affections; and they alone can say with certainty whether disease has actually existed, or if so, whether it is or is not actually cured by the remedy alleged to have removed it. For there is a strong inclination in mankind generally to assist in propagating an imposition to which they have themselves yielded, both because it makes them objects of interest to the public, and because it appears to justify them in having given it their confidence. These remarks may serve to prove the vast extent of that class of persons who, as we professed to shew, are most liable to be deceived by the impositions of quackery. I cannot refrain from introducing here a passage from a satirical publication, where this gullibility of the public is most forcibly,

though humorously exposed. The passage is the supposed advice of a parent to his son in the choice of a profession.

"As for medicine, if you set up in what is called an honourable manner, to kill by diploma, you will find the game so beaten and hunted that 'tis ten to one you bag a patient once a twelvemonth. If, indeed, fortified by your own authorised opinion, you can prescribe, if, by virtue of the Stamp Office—the government kindly suffering the utterance of any compound at 1s. 2d. per pot—you can persuade people into patent remedies against disease and death, disarming the destroyer by a learned name attached to bread pills or coloured Thames water,—take my blessing, and straightway, having entered into a sleeping partnership with a confidential undertaker, found a College of Health. There is no such golden walk to fortune as through the bowels of the credulous; and when sick all men are credulous. Pain is a great leveller, alike hurling down scepticism, philosophy, and mere prosaic common sense. The man who, before his friends, will sneer at a vaunted specific, will sneak out by himself to consult the quack vendor of the despised anodyne: in the same way that fine ladies, who laugh at the science of astrology, will disguise themselves in old shawls and bonnets, and venture up dirty lanes and into foul garrets, to consult bed-ridden fortune-tellers on the whereabouts and when-coming of their future husbands. If you have any feeling for medicine, and have face and nerve to cry 'quack' lustily, away with you into the market-place, and begin. But if, with the unprofitable pride of science, you would only physic, bleed, and blister on the strength of a diploma, the boy who carries out your medicine shall be happier than his master, and—when he gets his wages—better paid."

As to the manner in which credulity is worked upon by the author of a fallacious discovery, I would ask what would be the course adopted by men in general to test the truth or fallacy of any invention which professed by ingenuity and labour to supersede the theories and practice of a science which had existed for ages, and had submitted to those various improvements which the progress of human knowledge had suggested? We will take, as an example,

any fresh discovery in the art of war—such as a piece of ordnance, or any new manœuvre in military tactics, and we may be allowed to ask whether our commander-in-chief, by the advice of a person clearly and indisputably ignorant of all military matters, and therefore incompetent to judge of the merits or demerits of the proposed alteration, would himself immediately sanction its adoption, and only after it has occasioned the most disastrous consequences, or palpably failed in its promised effect, would direct the Board of Ordnance, or the authorities at Woolwich, to report upon its utility? Yet in this manner does the public take upon itself to decide, without submission to any medical board, upon a novelty the adoption of which may affect the existence of their nearest and dearest relatives; and in this manner do the leaders of the public mind give their countenance to theories upon the mere assertion of parties totally incompetent to judge of their practical effect or utility. In the instance above supposed, would not our commander-in-chief have first submitted the proposed innovation to the serious consideration of military men, and sanctioned by their experience and approbation, have commanded its general adoption? Ought not the same submission to the practical experience of the profession to have *preceded* the introduction of a medical novelty, the consequences of which might be, as unhappily they have proved to be, of so serious and lamentable a character?

This most reasonable method of testing the value of the homœopathic system was in fact adopted in a neighbouring country. The hospitals of France, being far from exclusive in their character, opened their wards to the disciples of Hahnemann, and what was the result, as published in a French medical journal? *They were found to fail in their experiments, and the wards were closed against them.* It is true that in this country it would never be allowed to open the wards of a hospital to try the effects of a new system upon the poor who were its inmates; but surely there would be no difficulty in forming a board of men of great eminence in each branch of the medical profession (and the appointment of such a board for so important a matter, where the lives of her Majesty's subjects are at stake, would not be unworthy the attention of the Government), who might examine

closely the *principles* as well as the *effects* of the new system, and disabuse the public mind, if they should be found unsound or dangerous; or recommend and adopt them, if deserving the attention which they claim. And here we would state our objection to that absurd and dangerous regulation, under which any person, professional or non-professional, ignorant or learned, is enabled to legalize the use of a nostrum, destructive perhaps in its ingredients, by simply applying at Somerset House for liberty, at the cost of 1s. 1½d. to poison and destroy any of her Majesty's liege subjects.

It has been said, that homœopathic practice at least is *harmless*; that the drugs which are used, although most powerful, being dispensed in such minute doses, can do no injury; but even if this were admitted, which, however, we are far from admitting, there are numerous maladies of a severe and active character, rapid in their progress, and if unchecked, productive of formidable organic changes, and fatal in their event. For such cases, during the trial of these *harmless* experiments, that time is lost beyond which there can be no remedy, and often is the faithful and regular practitioner at length called in for no purpose but to declare that he can render no relief. It is therefore highly necessary that the public should be apprized of this most probable result of their confidence in this charlatan practice, in cases at least of acute disease. It is necessary also that they should learn to distinguish between *cures* and *partial recoveries*, before they allow themselves to draw others into the trap by assertions of success, which may eventually prove false and unfounded. There is, moreover, another most dishonest method by which the believers in this system seek to gain proselytes. They assert that Dr. C. or Dr. L. has given up some particular case as hopeless, and beyond the reach of their skill, and that Dr. Q. or Dr. D. has been then called in with his homœopathic dose, and that miraculous has been the result! whereas in fact Dr. C. or Dr. L. have been so far from *declaring* such case hopeless (a plan which a skilful practitioner would very rarely adopt), that they have never *thought* it to be so; and thus the homœopathic doctor carries off the wreath which ought to have adorned the brow of his

supplanted predecessor. Again, there are many cases where the complaint has existed only in the *imagination* of the patient, and in these it will be no matter of wonder if the homœopathic globule, in aid of said imagination, should effect a cure. In chronic stomach disorders also, many patients have recovered under an homœopathic doctor, and thus been the means of exalting his fame, whereas it would be easy to shew that such patients needed only cautious diet, time, the abandonment of a habit of taking too much aperient medicine, and the observance of regular rules, to effect their cure—all of which, even an *old-fashioned* doctor would of course have directed.

"A gentleman had been out of health for some time, and had paid but little attention to the directions of his medical attendant; was advised to consult an homœopathic physician; he did so, and remained under his care six weeks, the doctor making his visit as often as he pleased; he improved in health, in short was cured. Now, exclaimed his friend, you henceforth stand up in defence of homœopathy. "Not at all; I am more convinced than ever of its fallacies and humbug. I have followed the plan of diet, &c., which plan was often urged upon me by my former medical friend, but not one of the billionth powders or globules have I taken."

By such and other similar methods the public mind is agitated, and these upstarts in the profession carry off the glory, which in the last generation was as freely and unreservedly bestowed on mustard seed; Morison's pills; tar-water; mesmerism; metallic tractors; St. John Long; Prince Hohenlohe, &c. &c. I will now give you, Mr. Editor, a few facts in illustration of the manner in which the people are led to give credit to the assertions of cures effected by this system, and thereby induced to adopt it.

A little girl, who suffered from inflamed glands in the neck, was under the care of an eminent surgeon, who, together with her friends, was most anxious to avoid any scars or marks which might disfigure the patient. A gland, however, suppurated, and an incision was made by the lancet, which evacuated the matter, and relieved the constitutional symptoms induced by its confinement, leaving little or no evidence of the occurrence of the disease.

Similar treatment was recommended in the event of future suppuration in any other glands. Her friends followed the advice of a person totally incompetent of judging of the system of homœopathy, to place her under the care of one of its practitioners. The surgeon, after some time, was requested to see the cure which had been effected in his former patient, and was not a little astonished to find that nothing had been done to check the evil they had before so dreaded, and that other glands had suppurated, had burst, and left their consequent deformity. As after the suppuration of the former gland, her constitution rallied, and this was the *vaunted* cure effected by homœopathy.

A gentleman had been for some time subject to acute inflammation of the "*membrana conjunctiva*," and had been attended by a surgeon of great eminence in the metropolis, who on every occasion had succeeded in subduing it. On a recurrence of the complaint, by the *judicious* advice of friends he was placed under the care of an homœopathic practitioner; when, after being for six weeks shut up in a dark room, great attention being paid to his diet and manner of living, he was cured again, by the *wonderful effects of the homœopathic remedies!!!* This of course stamped the faith of the family, and all became disciples of Hahnemann. Some time after one of its members was found in a fit, and the doctor sent for. What plan did he adopt? He, belonging to a school which professes to repudiate blood-letting as pernicious, and almost certainly fatal, himself immediately *bled her*, and that not in an homœopathic quantity, but largely. She continued under his care for a few days, but not recovering she was by the doctor's own desire sent into the country in this state, and handed over to her original medical attendant, who discovered, and was confirmed in his opinion by an eminent physician, that she had been suffering from *epilepsy* arising from the overloaded state of her stomach and bowels! This result of course effected the *moral* cure of the whole family.

I give you now a case of the mischief that may arise from adopting this *harmless* system. A lady of rank had occasional headaches, for which she was advised to consult an homœopathic physician. She had for many years taken daily aperient me-

dicine, but nevertheless enjoyed a very good state of health. Her old medical attendants were summoned to her assistance about the expiration of twelve months of homœopathic treatment; they found her labouring under congestion of the liver to an enormous extent, constipated bowels, and active peritoneal inflammation, all of which had existed for some days, and had not "yielded to the means employed" by the homœopath; he by whose treatment these formidable symptoms had been induced, willingly sneaked out of the responsibility: true, her life was saved, but she has never enjoyed her former good health.

In referring to the case of the lady detailed in your journal of the 6th instant, it must be remarked that in every stage of that poor lady's illness as well as pregnancy, great errors were obviously committed, at least according to the accepted practice in like cases, and had she been bled and purged during pregnancy it is more than probable no convulsions would have occurred, or had she been treated, after they set in, in the manner usually adopted in similar cases, even then she might have been saved. They clearly shew by their blustering and boasting bulletin, that they were ignorant of each stage of the disease, and the "yielding to the means employed (p)" was simply yielding to the progress of the malady. The lesions of the brain were such as would be the immediate result of the long-continued convulsions, and subsequent coma, and as regards the "*tumor*," surely it would not have prevented her living many years with proper treatment, as it had produced no previous symptom. Conceive the presumption of these men attempting to supersede the practical experience of such authorities as Sir Chas. Clarke, Drs. Gooch, Merriman, Locock, &c., all of whom have over and over again successfully treated such cases. I may add to this case, as an appendix, one of a lady who was attended by an homœopathic physician in typhus fever, when lying in a state of coma, after the previous stage of excitement. The physician assured her friends that his remedies had produced this desirable effect, and it was a crisis: in which crisis, however, she sunk.

A young lady suffered from distressing headaches arising from an occasional functional disturbance of the kidneys;

a relative having been supposed to derive a cure for headache by the assistance of *globules*, she was desired to consult one of the homœopathic practitioners. After being under his care five weeks, her former medical adviser was summoned to her aid: he found her with a brown tongue; pulse 120; distressing headaches, almost amounting to delirium; in fact, fast merging into typhus: she confessed her faithlessness to her old adviser, and with great clearness described all the category of the homœopathic doctor: not one question could lead to any *cause*, not one question could by possibility detect the existing disease, but she was told her remedy would first increase her suffering, and then a repetition relieve it: she followed implicitly his directions, which were doubtless conducting her to her grave, had she not been rescued by her ordinary medical friend.

I have been often amused by the contradictory tales which I have heard on the subject of homœopathic cures. For instance, I have been told that a noble duke has been by these remedies cured of his gout; and then I am compelled to hear that the noble duke is laid up with gout at his country-seat. A distinguished baronet also is cured of the gout, but I hear again that the senate-house has lost the valuable services of the worthy member, because—he is confined with the gout. A noble earl is cured of his most painful malady, *tic douloureux*, by homœopathic treatment, but by his friends I am assured that his sufferings are still very great. Another sufferer from this most dreadful disease, the Marquis of A—, first stamped the fame of this system as a certain cure for *tic douloureux*—but it is well known that the noble Marquis is still desirous of trying every remedy which can be suggested for the alleviation of his sufferings, and it is a remarkable fact that he has heaped honours and distinctions on many persons who have cured him of his malady—*tic douloureux*. It is often dinned in my ears that a certain noble earl swears by homœopathy; yet that noble earl flies to Malvern with all avidity to follow the most dangerous system of hydropathy for his relief. These are curious contradictions, but not more curious than true; and is it not wonderful that the fact of any person abandoning a system by which he has *sworn*, to adopt another diametrically opposed

to it, should not open the eyes of his friends as to the extent of his faith in it? The fact is, the public have not yet learned the necessity of enquiring what opportunities those persons have had, who profess to practise medicine or surgery, of perfecting themselves, not merely in the knowledge of remedies, but, what is of infinitely greater importance, in distinguishing the character of diseases.

How many are there in the ranks of the profession, men of honour and talent, who have not thought it beneath them to spend often half their lives in the drudgery of public practice in hospitals and similar institutions, that they might attain a competent knowledge of diseases as distinguished from each other, and of applying remedies to each individual case; for, after all, each case is a particular disease, and cannot be treated in a wholesale manner, as these systems would induce us to suppose.

How often do we hear these men, after they have obtained all the information in their power, and attained to stations of eminence, expressing their regret that they have been prevented from devoting a still larger portion of their time to learning an art which is infinite in its extent and complexity? I mean the art of detecting and distinguishing diseases under innumerable phases. This, in fact, is the foundation of the art of medicine; for when a disease is once surely ascertained and detected, it is comparatively easy to find its proper remedy, and to cure it, if it is in its nature curable. The public, I repeat, make no such inquiries, but hearing that a case has been cured by an unusual remedy—brandy and salt, or mustard seed, for instance—they immediately infer that these remedies, if applied by a certain individual, will cure every disease; and, therefore, this individual, whether young or old, male or female, learned or unlearned, cobbler or dancing-master, is the person to be consulted, and is preferred to those who have devoted the best portion of their lives to the study of their profession.

I hope, Mr. Editor, that I have thus succeeded in shewing, as I proposed, that those persons who are influenced by faith in these empirical remedies are not competent judges of their efficacy; but that, on the contrary, their faith is built on absurd reasoning or contradictory evidence. It will be seen, also, that those only who have not made the human frame, and the science of medi-

cine, their careful study, can be deceived by such cases of pretended cure as those upon which these practitioners claim their confidence. The instance reported in the *GAZETTE*, and commented on in another part of my paper, must convince, one would suppose, every candid enquirer, that in cases of acute disease at least, the homœopathic system must necessarily fail, and be productive of most lamentable results; as another example of which we might quote the well-known case of Madame Malibran, at the period of whose melancholy death it was clearly shewn, in many of the periodical publications, that this system betrayed its entire want of power to combat any one symptom of her disease. I have proved also that these doctors are not conversant with the symptoms of disease as they arise, and are ignorant of the effect which their own remedies are expected to produce; and that they altogether disregard or lose sight of the connecting influences of cause and effect. And it will be seen, by referring to the case of the little girl, that more latitude is allowed to the empiric than to the straight-forward and simple treatment of the regular practitioner; and that the pretended cure of gout, tic dolooureux, habitual head-aches, &c., is only a deception practised on the credulity of the sufferer; and we might fairly warn the public that the system is opposed to the practical experience of men of the greatest eminence, and that they may be probably laying the foundation of other maladies, which, when they do appear, may baffle the skill of the most experienced in the profession.

Finally, I have endeavoured to illustrate the fact, that the method generally adopted in this country at the present day, to test the utility or soundness of any medical discovery, is entirely opposed to reason and common sense; that previous education and laborious research, which used to be considered absolutely necessary as a foundation for the practice of medicine, are now totally disregarded, and never inquired after; whilst the pretended inventor of any wonder-working specific is infinitely more sought for, and more implicitly relied on, than the most experienced, the most skilful, and the most eminent physician.—Your faithful servant,

LATIS SUPERQUE.

Jan. 15, 1843.

[The author of the preceding letter has furnished us with his name.—*Ed. Gaz.*]

ENGLISH POOR LAW, AND SCOTCH DEGREES.

To the Editor of the Medical Gazette.

SIR,

IN perusing the MEDICAL GAZETTE, for December, my attention has been drawn to the question of *E. M. R.*, relative to the English Poor Law, and Scottish Medical Degrees. As the information required will be found in the letter addressed to me, in answer to one which I wrote to the Poor-Law Commissioners on the subject, I beg leave to enclose three letters, inserted in the *Caledonian Mercury* of the 17th of December, for the information of *G. M. R.* I shall feel much pleasure in forwarding the documents in my possession, if necessary; and I sincerely hope that every exertion will be used to promote the best interests of the medical profession, which can only be effected by upholding the rights and privileges of those honourable institutions in which medicine was first taught as a science, to the dismay of quackery.

I remain, sir,

Your most obedient servant,

WM. AUG. WOLSELEY.

January 5, 1843.

ENGLISH POOR LAW—SCOTTISH MEDICAL SCHOOL.

To the Editor of the Caledonian Mercury.

SIR,—I have always looked upon the press as the proper and true means for remedying existing ills. I, therefore, on the present occasion, venture to trespass upon your kindness in begging you to lay before the public the communication I have the honour to transmit. A few days ago, I received from England the paragraph quoted in my letter to the Poor Law Commissioners, with the following observation:—"I inclose you a paragraph which I cut out of Woolmer's paper. I was surprised to see it, as I always thought that degrees or diplomas of the Scotch Universities or Colleges were thought so highly of; but from this it would appear not." Upon the reception of this, I immediately addressed the subscribed letter to the Commissioners, to ascertain the truth of so glaring a statement; and to my horror, the paragraph, instead of being contradicted, has been confirmed. As that letter gives no satisfactory explanation as to the motives which have induced the Commissioners to adopt so illiberal a course towards Scotland, but merely refers to certain resolutions and minutes of that body, by which I cannot gain the information I require, I think it my duty to do every thing in my power to incite the authorities and public of this country to take it up as a general question,

involving the honour and interests of one of the oldest and most learned schools of medicine in the world. It may well be said that the University of Edinburgh stands upon a basis not to be shaken by the malicious designs or envious feelings of any constituted body; but then, again, the opinion of the public must be duly considered; the resolutions of the Poor Law Commissioners have distinctly impressed the public with the idea that our qualifications are unsatisfactory, and therefore not entitled to administer remedial agents to the sick out of Scotland or Ireland. The Commissioners themselves, however, fully sensible of the absurdity of such a decree, have made certain observations to the effect, that however great a fool a man may be, if he possesses the diploma of any licensed body in *England*, he is entitled to commit as many depredations as he pleases upon the constitutions of her Majesty's subjects; but that a man, however enlightened, if he has the misfortune to belong to a Scotch school, must keep his lancets quietly in his pocket, and curse the day he commenced the study of medicine. I am far from wishing to under-estimate the acknowledged reputation of the several learned bodies in England; but, at the same time, as a student of this University, I cannot but feel grieved when I find the laurels plucked from the brows of those men whom I reverence, to adorn those of others; but I feel assured that the medical profession of England are by far too enlightened, and too sensible of the additions made to science, through our venerable Alma Mater, to wish that we should occupy a place beneath that which learning has assigned to the University of James the Sixth. It therefore requires simply a healthy action, not amounting to actual inflammation, to restore that feeling which should characterise the inhabitants of a learned and civilised country. The objects, therefore, I have in view in bringing this matter before the public are—

First, To dissuade the minds of those who have not had opportunities of judging of the merits of the Scotch and Irish School of Medicine of impressions based on the resolutions which the Poor Law Commissioners have come to, concerning the appointment of medical officers; and

Secondly, To memorialise her Majesty, through her Majesty's Secretary, for the purpose of humbly suggesting that those acts which have lately led the Commissioners into such erroneous conceptions of the privileges connected with the Scotch and Irish Universities and Colleges be revised.

The first of these objects I consider to be attained by the revision of the acts. To carry into immediate effect the second ob-

ject, a memorial should be drawn up and left in the Library of the University and the Museum of the College of Surgeons, for signatures.

Some may think it proper that the heads of the several learned bodies should use their exertions and authority in claiming a satisfactory adjustment of our claims. This has been done, and, from what I learnt in the City Chambers, with quite as unsatisfactory a result as my communication. Had I conceived that it remained solely with them to forward our interests on this occasion, I should not for one moment have presumed on my own responsibility to draw your attention to so grave a subject. Should this communication be in any degree instrumental in removing, what I hold to be of the greatest consequence, the prejudice which may have been excited in any one individual, I shall have the proud satisfaction of knowing that I have not been insensible to the claims which this University has upon me as a student. Begging that I may be excused for taking up your time,—I am,

Your most obedient humble servant,

WILLIAM AUGUSTUS WOLSELEY.

11, Elder Street, Edinburgh, Dec. 16, 1842.

P.S.—I may beg to refer all those interested in the subject to the documents of the Poor Law Commissioners.

GENTLEMEN,—I beg leave to bring before your notice a subject which affects most materially the interests of a great number of the medical profession, and particularly those who are now studying at the several Scottish Colleges and Universities. I refer to several paragraphs which have lately appeared in the columns of the English press, and which I take the liberty of quoting:—"It may be of importance to many, especially to those preparing for the medical profession, to know, that degrees in medicine, or diplomas in surgery, of Scotch Universities or Colleges, confer no privileges out of Scotland—do not qualify for any surgical or medical appointments under the new poor law, the militia, or prison acts of Parliament. The Poor Law Commissioners have recently dismissed all those who held Scotch diplomas from their offices under them, as unqualified."—*Woolmer's Exeter paper*.

Being a student of the University of Edinburgh, you will readily see how such an act is likely to interfere with my future prospects, not only in depriving me of the privilege of holding an appointment under the poor law act, &c., but injuring me in the sight of the community at large, who imagine that there must be something deficient in our education, by which we are pronounced unqualified to hold such appointments.

When, Gentlemen, you for one moment reflect on the names of those who for centuries past adorned the annals of the medical profession, I feel assured you must pause before you pronounce the sentence I have taken the liberty to quote.

I shall feel obliged if you will do me the honour of informing me whether such a resolution has actually emanated from your honourable body.—And, Gentlemen,

I have the honour to be,

Your most obedient humble servant,

WILLIAM AUGUSTUS WOLSELEY.

11, Elder Street, Edinburgh, Dec. 6, 1842.

*To the Honble. the Commissioners
of the Poor Law.*

SIR,—I am directed by the Poor Law Commissioners to acknowledge the receipt of your letter of the 6th instant, submitting to them some observations and inquiries with reference to the claims of medical practitioners, having a Scottish degree or diploma, to hold the appointment of medical officer in the poor law unions of England.

I am to transmit to you, for your information, the accompanying copy of a general order issued by the Commissioners on the 12th of March, 1842, containing, among other regulations as to medical appointments, some provisions relating to the qualification of medical officers. I am also to transmit to you a copy of a minute of the Commissioners, dated the 12th day of May, 1842.

These documents will explain to you what regulations have been made by the Commissioners on the subject adverted to by you in your letter, and also the grounds on which the Commissioners are of opinion, that in the present state of the law, medical practitioners, possessing only a Scotch qualification, are not legally eligible for the appointment of medical officers in England.

I am, Sir,

Your most obedient servant,

E. CHADWICK, Secretary.

Poor Law Commission Office, Somerset House,
10th December, 1842.

*William Augustus Wolseley, Esq.,
11, Elder Street, Edinburgh.*

PORTUGUESE PRACTICE.

[Continued from p. 570.]

*History of a Lacerated Wound cured with
Creosote; by Sgr. J. B. S. CADET.*

A strong and stoutly-built field-labourer, aged 58, on the 18th of October, 1838, was attacked by a bull, whose horn penetrated the upper part of his left thigh. The wound was parallel with the pubes, and its direction was downwards and backwards, upwards and

inwards, so that the fascia lata and the muscles of the anterior crural region were lacerated. The skin was not torn away in the whole circumference of the wound, which, in fact, formed a hole.

Until the 23rd the patient treated himself with domestic remedies, attempting to stop the hæmorrhage, which was considerable; and on the evening of this day he was seen for the first time by a colleague of the author, who took away eight ounces of blood, and applied charpie between the edges of the wound, and a warm bandage over it. The next day, when the author saw the patient, he found the wound inflamed and painful, and also the whole thigh and hip-joint stiff, together with symptoms of violent fever. He was again bled to eight ounces, diluents were prescribed, with an opiated emulsion at night, and a warm bandage was applied.

The condition of the patient improved till the 30th, when suppuration appeared; the pain in the wound again became more violent, and was increased by pressure upon the great trochanter backwards, for which reason the bandage was enlarged in that direction. An erysipelatous state of the wound, which had appeared on the 6th of November, increased extremely on the 7th, in consequence of errors in diet, while the pain and fever were also much augmented. The strictest diet was prescribed, and cataplasms were applied only to the aperture of the wound.

The night of the 7th of November having been very restless, three grains of ipecacuanha were prescribed, to be taken every half-hour. The third dose was followed by copious stools and vomiting, on which the erysipelas, pain, and fever, disappeared until the 11th. Tents of charpie, covered with *balsamum Arcei** and yolk of egg, were again introduced into the wound, and a warm bandage placed over it.

November 15.—A fresh collection of pus had now formed above the upper part of the great trochanter; the sound struck against the bone, without any discoverable communication between the two abscesses. After consultation with his colleague, Pereira, the author ordered an infusion of roses, with decoction of mallows and rose honey to be injected, and a light compress to be applied to the aperture of the wound. On the 17th, however, he substituted creosote water (made with ʒss. to lbjss. of water), which was used thrice a day. The patient merely complained of a slight burning, during and directly after the injection. The state of the patient now improved rapidly; the thigh was more moveable, and the suppuration diminished, and fragments of the fascia lata came away. After the lapse of some days, tincture of

creosote was used instead of the water; the compress was continued; the suppuration was slight, and the appetite good. On the 8th of December the wound was entirely closed, the patient was able to walk, and was discharged.

Case of blepharitis mucosa cured by a solution of lunar caustic. By the same author.

The most violent symptoms of a catarrhal inflammation of the eyes, in which the conjunctiva and lids were particularly affected, had been removed by general and local anti-phlogistic remedies. Signot Cadet ordered the eyelids, which were still red and swollen, to be touched twice a day with a solution of two grains of nitrate of silver in an ounce of water. In five days the redness and swelling had disappeared.*

Statistics of the diseases treated in the regimental hospitals of the army, during the first half of 1838, by the Military Council of Health.

Remaining under treatment, 374; admitted, 4,111; total, 4,485; discharged, 4,041; died, 72; remained under treatment, 372. The great number of cases of bronchitis, namely 340, is striking in a country to which phthisical patients are so readily sent. The numerous cases of gastro-enteritis, 283, are also remarkable; but this probably depends on the influence of French theories. The cases of *dolores syphilitici*, syphilitic gout or rheumatism, are also numerous, and the sum total of primary and secondary syphilitic cases amounts to nearly 700.

Extract from the Transactions of the Medical Society at Lisbon.

The Society was chiefly occupied during its January sitting with two objects—1. A plan for gratuitous consultations for the poor; 2. A memorial to be presented to the representatives of the people, on the reform of medical studies in Portugal.

Case of an anomalous tumor cured by narcotics.

Hufeland says: "the therapeutic power of opium in many external pathological products is very remarkable, particularly in polypi, and deserves to be more frequently tried in organic diseases of the anus." The following fact seems to speak in its favour.

A lady, aged 85, who had always been healthy, had a small pimple, which suppurated, on the upper and external part of the little finger of the right hand. The pain caused by this pimple, which was not bigger than a peppercorn, extended over the whole hand, as far as the arm and breast. Al

* The *Balsamum Arcei* of the French codex is made of mutton suet, larch turpentine, elemi resin, and lard.—Translator's note.

* The only singular thing about this case is, that the treatment should have been considered sufficiently remarkable to deserve mention.—Translator's note.

these parts were somewhat swollen, except the forearm, on the inner and upper parts of which was a hard and painful convulsion of lymphatic vessels or knots; and a similar one under the axilla.

This morbid growth was said to have been originally a wart, which had inflamed and softened, and from which the patient had pulled off the cuticle, in the hope of quieting the pain, by evacuating the red fluid which it contained. When the author saw it, the tumor was small, red, fleshy, and, in some points, of the colour of pus; and it rose from a fibrous stalk rooted in the cellular substance. Spermaceti ointment was first applied, but without effect; on the contrary, the circumference increased, and the pain remained the same. Nor was any benefit derived from the continuance of warm bandaging, or by cauterization with nitrate of silver. The tumor increased, and had a disposition to slight hæmorrhage. Nitrate of mercury was then applied externally, and iodine given internally, together with pills of mercurial ointment (*mercurpomade*) and purgative resins. Nevertheless, the tumor was now larger than a pea, and bled on the slightest touch; the pain was the same, and the patient could not sleep. After sixteen days' treatment a consultation was held, in which the tumor was declared to be cancerous, but the operation was rejected on account of the lady's great age. Mild topical remedies, and a compress of moderate force, were held to be the best palliatives. After spermaceti ointment had been applied for ten days, with gentle pressure, the tumor had become as large as a bean, constantly secreted ichor, and bled every time it was dressed. Under these circumstances the patient was recommended, on account of her pain and sleeplessness, to wash her hands frequently with a decoction of poppy-heads and belladonna; and every evening, before going to bed, she took half a grain of the watery extract of opium. In a few days after the use of these baths, the pain decreased, the ulcerated surface of the tumor dried, soon cicatrized, and its circumference diminished considerably. In two months, a mere trace, as large as a pin's head, was all that remained of it; all remedies were, therefore, discontinued, and the rest left to nature.

[To be continued.]

HOMŒOPATHY.

To the Editor of the Medical Gazette.

SIR,

MY attention has been directed to a letter in your last number, relative to the death of Lady —.

It is almost beneath contempt, but permit me to say, that it is throughout a mere

perversion of facts. I shall be happy to give a true statement of the case to any medical gentleman who will take the trouble of calling on me.—Your obedient servant,

HARRIS DUNSFORD, M.D.

28, Somerset Street, Portman Square,
Jan. 12, 1843.

[We regard the preceding as a mere *brutum fulmen*. Why does not the Doctor state in what the "perversion of facts" consists?—ED. GAZ.]

A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, January 7, 1842.

Small Pox	14
Measles	24
Scarlatina	27
Whooping Cough	31
Croup	9
Thrush	3
Diarrhoea	11
Dysentery	2
Cholera	2
Influenza	1
Typhus	20
Erysipelas	7
Syphilis	2
Hydrophobia	0
Diseases of the Brain, Nerves, and Senses ..	146
Diseases of the Lungs and other Organs of Respiration	267
Diseases of the Heart and Blood-vessels	37
Diseases of the Stomach, Liver, and other Organs of Digestion	53
Diseases of the Kidneys, &c.....	6
Childbed	8
Ovarian Dropsy	1
Disease of Uterus, &c.	1
Rheumatism	4
Diseases of Joints, &c.	2
Ulcer	0
Fistula	1
Diseases of Skin, &c.	1
Diseases of Uncertain Seat	163
Old Age or Natural Decay	73
Deaths by Violence, Privation, or Intemperance	11
Causes not specified	2

Deaths from all Causes 869

METEOROLOGICAL JOURNAL.

Jan. 1843.	THERMOMETER.	BAROMETER
Wednesday 11	from 29 to 37	29.05 to 28.91
Thursday . 12	27 34	28.70 29.16
Friday . . 13	24 45	28.22 28.56
Saturday . 14	30 38	28.96 28.54
Sunday . . 15	22 35	28.84 28.96
Monday . . 16	25 39	29.31 29.81
Tuesday . 17	32 44	30.09 30.12

Wind, N.E. on the 12th, and N.W. on the 15th and 16th, otherwise S. and S.W.

Weather exceedingly variable: snow on the evening of the 11th, morning of the 12th, and afternoon of the 14th. The sudden change in temperature between 2 and 3 o'clock in the morning of Friday the 13th, together with the violent storm of wind and rain, is worthy of particular notice: the low state of the barometer is no less remarkable.

Rain fallen, .41 of an inch.

WILSON & OGILVY, 57, Skinner Street, London.

THE
LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, JANUARY 27, 1843.

LECTURES
ON THE
THEORY AND PRACTICE OF
MIDWIFERY,

*Delivered in the Theatre of St. George's
Hospital,*

BY ROBERT LEE, M.D. F.R.S.

LECTURE XIV.

*On the Discovery of the Structure of the
Placenta; the Fœtal Circulation; the
Function of the Intestines, Liver, and
Kidneys of the Fœtus, and its general
appearance in the latter months of preg-
nancy.*

FROM the facts which were stated in the last lecture, it appears that the placental decidua, the foetal circulation of the placenta, the cavernous structure, and its connection with the venous system of the uterus and the decidua arteries, had all been described and delineated before the publication of Dr. Hunter's engravings of the gravid uterus in 1774. The Hunters, therefore, cannot, without injustice to those who preceded them, be considered as entitled to the honour of contributing any new facts to the anatomy of the placenta, except the two following, viz. the termination of the decidua arteries in the cavernous structure, and the existence of a layer of decidua on the foetal surface of the organ. But this places their merits in a far more exalted and conspicuous view than if they had made fresh discoveries in the anatomy of the placenta; for, by reasoning upon appearances which had previously been seen by others, they drew conclusions which no physiologists before them had been able to draw. Roederer in 1759, saw everything that John Hunter saw in 1754, and yet remained entirely ignorant of the anatomy and physiology of the placenta. The discovery of the circulation of the maternal blood in the placenta, made by the Hunters, which throws

so much light upon the whole economy of the fœtus, especially the processes of respiration and nutrition, will be regarded in all future ages as one of the greatest that has ever been made in human anatomy, and as second only to the discovery of the circulation of the blood by Harvey. That Mr. Hunter looked upon it in this light in 1780, when he contested the honour of the discovery with his brother so warmly before the Royal Society, there can be no doubt. Admitting the statements in this paper to be correct, although neither Dr. Fordyce, nor any other gentleman to whom he appealed in support of their truth, as far as I can learn, ever came forward to bear witness in his favour, Mr. Hunter was certainly bound by gratitude, and by all the principles of honour and justice, to have made this claim before Dr. Hunter published his work in 1774, or never to have made it at all. It must never be forgotten that Dr. Hunter remained ignorant of Mr. Hunter's claim for twenty-five years, during the whole of which time he had considered himself, and had been regarded by others, as solely entitled to the distinguished honour of this discovery; that thirteen of these twenty-five years were devoted to the investigation of the anatomy and physiology of the placenta, and that our knowledge of the structure and functions of the organ has been derived chiefly, if not entirely, from the dissections, lectures, and publications of William Hunter.

Before taking leave of this subject I shall read to you an extract from Mr. Hunter's paper on the structure of the placenta, presented to the Royal Society in 1780, which contains an account of the manner in which he says the discovery was made by him in 1754: "The late indefatigable Dr. M^r Kenzie, about the month of May, 1754, when assistant to Dr. Smellie, having procured the body of a pregnant woman, who died undelivered at the full term, had injected both the veins and arteries with particular success; the veins being filled with yellow, the arteries

with red. Having opened the abdomen and exposed the uterus, he made an incision into the fore part, quite through its substance, and came to what seemed to be an irregular mass of injected matter. The appearance being new, he proceeded no further, and greatly obliged me, by desiring my attendance to examine parts in which the appearances were so uncommon. The examination was made in his presence, and in the presence of several other gentlemen whose names I have now forgotten; but I have reason to believe that some are settled in this country, who, I hope, will have an opportunity of perusing this publication. I first raised, with great care, a part of the uterus from the irregular mass, and in doing this observed regular pieces of wax passing obliquely between it and the uterus, which broke off, leaving part attached to that mass; and on attentively considering the portions towards the uterus, they plainly appeared to be a continuation of the veins passing from it to this substance, which proved to be placenta. I likewise observed other vessels, about the size of a crow-quill, passing in the same manner, although not so obliquely; these also broke on separating the placenta and uterus, leaving a small portion on the surface of the placenta; and on examination they were discovered to be continuations of the arteries of the uterus. My next step was to trace these vessels into the substance of what appeared placenta, which was first attempted in a vein; but that soon lost the regularity of a vessel, by terminating at once upon the surface of the placenta, in a very fine, spongy substance, the interstices of which were filled with yellow injected matter. This termination being new, I repeated the same kind of examination on other veins, which always led me to the same terminations, never entering the substance of the placenta in the form of a vessel. I then examined the arteries, tracing them in the same manner towards the placenta, and found that having made a twist, or close spiral turn upon themselves, they were lost on its surface. On a more attentive view, I perceived that they terminated in the same way as the veins; for opposite to the mouth of the artery, the spongy substance of the placenta was readily distinguished, with the red injection intermixed. Upon cutting into the placenta, I discovered, in many places of its substance, yellow injection, in others red, and in many others these two colours mixed. The substance of the placenta, now filled with injection, had nothing of the vascular appearance, nor that of extravasation, but had a regularity in its form, which showed it to be naturally of a cellular structure, fitted to be a reservoir for blood. I perceived, likewise, that the red injection of the arteries (which had been first injected), had passed out of the substance of

the placenta, into some of the veins leading from the placenta to the uterus, mixing itself with the yellow injection; and that the spongy chorion, called the decidua by Dr. Hunter, was very vascular, its vessels going to and from the uterus, being filled with different coloured injections. After having considered these appearances, it was not difficult for me to determine the real structure of the placenta, and course of the blood in these parts; but the company, prejudiced in favour of former theories, combated my opinion, and it was even disputed whether or not these curling arteries could carry red blood. After having dissected the uterus with the placenta and membranes, and made the whole into preparations, tending to show the above facts, I returned home in the evening, and communicated what I had discovered to my brother, Dr. Hunter, who at first treated it and me with good-humoured railery; but on going with me to Dr. M'Kenzie's, he was soon convinced of the fact. Some of the parts were given to him, which he afterwards shewed at his lectures, and probably they still remain in his collection. Soon after this Dr. Hunter and I procured several placentæ, to discover if, after delivery, the termination of the veins and the curling arteries could be discovered: they were discernible almost in every one; and by pushing a pipe into the placenta we could fill not only its whole substance, but also the vessels on that surface which was attached to the uterus, with injection. The facts being now ascertained, and universally acknowledged, I consider myself as having a just claim to the discovery of the structure of the placenta, and its communication with the uterus, together with the use arising from such structure and communication, and of having first demonstrated the vascularity of the spongy chorion." In a note to this paper Mr. Hunter says, "I was indeed so tenacious of my claim to the discovery, that I wrote this account in Dr. M'Kenzie's life-time with a design to publish it; and often communicated my intentions to Dr. George Fordyce, whom I knew was very intimate with the doctor, in consequence of both teaching in the same place, and making many experiments together; therefore, he is a kind of collateral witness, that what I now publish is the same account which I gave in Dr. M'Kenzie's life-time." He assigns no reason for concealing this intention from his brother for twenty-five years; nor is there any explanation of this offered in his letter to the Royal Society in reply to his brother's.

The following letter, which I extracted from the Archives of the Royal Society ten years ago, is probably the last letter written by William Hunter, who died in 1783, which has been preserved, and it displays the same magnanimity of character under the most trying circumstances, for which he had been

so distinguished during the whole of his glorious career.

“Windmill Street, Feb. 3, 1780.

“Dr. Hunter begs the favour that the secretary to the Royal Society will read to the Society what follows. Mr. Hunter’s account of the structure of the human placenta, explaining the connexion and circulation between the mother and the fœtus in utero, which was read at the last meeting of the Royal Society, informs us that it was a discovery which he made with Dr. M’Kenzie, and that it was not claimed by me. The Society will be sensible that I am reduced to the necessity of taking notice of this mistake, when they are informed of the following facts:—1st. That the doctrine has been many years ago published in printed books as my discovery, and had been communicated as such by myself. See Baron Haller, for instance, in the second part of the eighth volume (p. 220), of his great *Physiology*, in quarto, printed thirteen or fourteen years ago. 2dly. Besides treating of it as my own discovery, in my lectures upon the subject, I have always done so for many years last past in the very first lecture of my course, which is the most public of all, because the door is then open to every person whose curiosity prompts him to be present. In the third place, occasionally, both in what I have printed and in my lectures, I hope I have not overlooked opportunities of doing justice to Mr. Hunter’s great merits, and of acknowledging that he had been an excellent assistant to me in this and in many other pursuits. By doing so I always feel an inward gratification—shall I call it pride? I had given him all the little anatomical knowledge which I could communicate, and put him into the very best situation that I could for becoming what this Society has for some time known him to be. May it be presumed, then, that I stand possessed of the discovery in question, till proof shall be brought to dispossess me? I shall most willingly submit to the pleasure of this Society. If they signify an unwillingness that this emulation (I will call it) should go on, I shall acquiesce, and be silent. If curiosity, justice, or the laws and practice of the Society, should incline the council to seek out and determine upon the merits, I shall be equally ready to obey their commands. And if it should appear reasonable to them, I would first beg to know the grounds of Mr. Hunter’s claim, as I am too well acquainted with his abilities not to think that he must be able to support his claim by something that I am ignorant of; and if I should receive that satisfaction, I shall immediately shew that I am more tenacious of truth than even of anatomical discoveries; but if that information should not alter my thoughts upon the question, I shall shew to the satisfaction of the Society, if I can at all judge of my own employments and pursuits, that

my pretensions arise out of a long series of observations and experiments, made with a view to the discovery in question; that it was not a random conjecture, a lucky thought, or accidental occasion, but a persevering pursuit for twelve or thirteen years at least, the progress of which was always publicly known here, and admits of the most circumstantial proof.—WILLIAM HUNTER.”

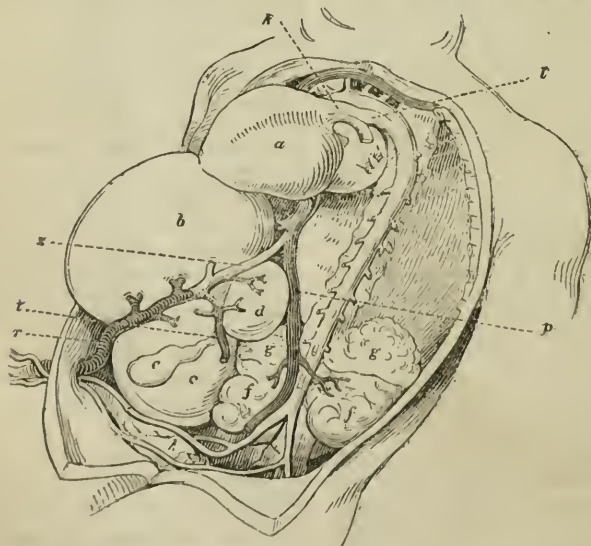
As Mr. Hunter’s reply contains no new facts in addition to those stated in the preceding extract from his paper, it is unnecessary to read this to you, but if you feel a desire to peruse it, you will find it in Palmer’s edition of John Hunter’s Works, vol. i. p. 79.

Fœtal circulation.—The blood of the fœtus is of a uniform dark colour, like venous blood, but quickly assumes a bright florid tint on exposure to atmospheric air. It coagulates on standing, though it contains much less fibrine than adult blood. It has corpuscles, which resemble, in a striking manner, those seen through a good microscope in common blood. Dr. Jeffreys, of Glasgow, stated many years ago, in his Thesis, that the blood in the umbilical vein is of a light scarlet colour, like arterial blood, and that the blood in the arteries is like venous blood. Bichat made experiments on the guinea-pig; but he never could perceive any difference between the blood of the umbilical arteries and veins. I think it extremely probable that the blood returning from the placenta is of a more florid colour than that proceeding to it; but it is very difficult to demonstrate that it is so. I have frequently put two ligatures quickly around the cord while the blood was circulating in it, but I could discover no difference of colour through the sheath. I have placed the portion of cord with the vessels full of blood in a crystal jar full of water; but still the difference was not visible. I have also frequently examined the blood which has escaped from the vein and arteries immediately after the division of the cord, and I have sometimes thought I saw a difference; at other times none. Almost the instant the blood, both of the arteries and vein, comes in contact with the air, the colour is changed; and this renders it so difficult to tell whether there does actually exist a difference of colour in the blood proceeding to the placenta and returning from it.

The umbilical vein, on passing into the great fissure of the liver, as you see in this preparation, forms an arch, from which there are given off several great branches, which proceed to ramify in the left lobe. The vein, much reduced in size, passes forward, and then gives off the ductus venosus, which terminates in the vena cava. The ductus venosus is small where it leaves the umbilical vein, and its orifice is still further diminished by a kind of valve formed by a doubling of the inner coats of the vessel,

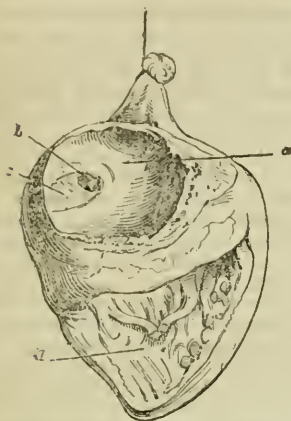
which was first described by Bichat. The umbilical vein, still further reduced in size, goes forward a few lines, and unites with the trunk of the veins which bring the blood back from the principal abdominal viscera. This trunk of the abdominal vein and the umbilical vein, after giving off the ductus venosus, unite, and form a large venous trunk of three or four lines in length. This great vein subdivides into a number of large branches, which principally supply the right lobe of the liver. The whole blood of the umbilical vein, and all the blood of the vena portæ, except what passes through the ductus venosus into the vena cava, which is probably a very small quantity, circulates through the foetal liver before reaching the right auricle of the heart. The hepatic veins, which, you see, are large and numerous, collect the blood from all parts of the liver, and convey it into the vena cava ascendens close to the right auricle. Some physiologists believe that this blood from the liver passes directly from the vena cava ascendens through the right auricle by the foramen ovale into the left auricle; while the right auricle is distended entirely with the blood of the vena cava descendens, which brings back the blood from the head and superior extremities. I believe the two currents meet and partially mingle in the right and left auricle, and that both these cavities are filled at the same time with equal quantities of blood, and that they are emptied at the same in-

stant by the simultaneous contraction of their walls. The blood of the left auricle passes into the left ventricle and the aorta, from which it is distributed to the head and upper extremities, by the arteria innominata and left carotid and left subclavian arteries. But the whole blood of the left auricle and ventricle is not expended upon the head and upper extremities, and a large quantity is conveyed forward by the aorta, to meet and mingle with the blood of the right auricle and ventricle conveyed into the aorta by the ductus arteriosus. At the junction of the aorta and ductus arteriosus, the whole blood of the right ventricle mixes with the remaining blood of the left ventricle, after the head and upper extremities have been supplied. The aorta and ductus arteriosus, which passes off from the root of the pulmonary artery and exceeds it in diameter, as you see in the preparation, unite a short way from the heart, and form the thoracic and abdominal aorta, which terminates, after supplying the viscera and lower extremities, in the two internal iliac or hypogastric arteries, which you see passing up by the sides of the bladder to the umbilicus, where they enter the cord and form the umbilical arteries. Both ventricles contract at the same time, and the force of both is exerted in propelling the blood of the aorta and umbilical arteries forward to the placenta, to be returned, after circulating through its capillary vessels, by the umbilical vein to the liver, as I have now described.



a. Heart. *b.* Left lobe of the liver turned back. *c.* Right ditto. *d.* Lobula Spigelii. *e.* Gall bladder. *f, f.* Kidneys. *g, g.* Glandulae renales. *h.* Urinary bladder of a conical shape: the urachus is seen extending up to the umbilicus. *i.* Aorta, giving off the intercostals, &c. *k.* Pulmonary artery; the left branch observed cut. *l.* Ductus arteriosus. *m, m.* Umbilical arteries arising from the internal iliacs, running up one on each side of the bladder, and passing out at the navel. *n.* Left subclavian vein. *o.* Two of the pulmonary veins, terminating in the left auricle. *p.* Inferior cava. *q.* Vena cava hepatica. *r.* Umbilical vein. *s.* Ductus venosus, the continuance of the umbilical vein. *t.* Vena porta.

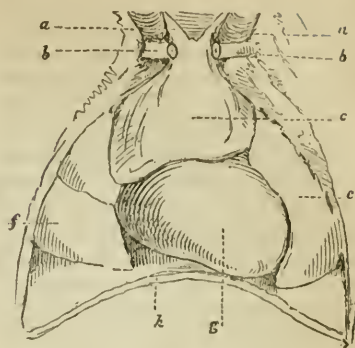
In the preceding representation of the fœta circulation from Tiedemann, you will see that the termination of the umbilical vein in the trunk of the abdominal veins or vena portæ, is not correctly delineated. The figures of the fœtal heart and thymus gland are from Dr. P. H. Ramsbotham's lectures.



Fœtal heart of the natural size; the auricles and ventricles are cut open, their septa being preserved; it is suspended by the superior cava. *a.* Cavity of the right auricle. *b.* Foramen ovale. *c.* The valve of the foramen, partly drawn over the aperture. *d.* Cavity of the right ventricle.

In *this* fœtus, which was still-born, you see that the lungs do not come into view when the thorax is opened, but that they occupy the back part of the chest, and that the pericardium and thymus gland lie behind the sternum. If the lungs are taken out, you see that they are of a dark colour, but very different in density and general appearance from the liver. If a small portion of lung be cut off and dropped into water, it immediately sinks. If a little air be introduced into one of the bronchial tubes of another portion by the blow-pipe, you see how suddenly its dark colour is converted into a light-yellow hue, and that it floats if thrown into water. I shewed you very lately the lungs of a child, which had breathed for a short time after birth, and yet they sank in water as if no air had entered them. In cases of suspected child-murder this may lead you to be cautious in the evidence you give.

In the following figure you have a representation of the thymus gland, about the anatomy and physiology of which I am unable to say anything at present that is satisfactory. I am disposed, however, to believe that Hewson's account of this body is the most correct that has yet been given.



a a. Carotid arteries. *b b.* Clavicles. *c* Thoracic lobe of the thymus. *d d.* Cervical cornua of the same gland. *e.* Left lung. *f.* Right lung; neither yet expanded. *g.* Heart, covered by the pericardium; its principal part appearing between the collapsed lungs. *h.* Diaphragm very convex towards the chest.

The early appearance of the fœtal liver, its great size during the whole period of gestation, the large supply of blood which it receives from the placenta and vena portæ, are circumstances which clearly indicate that the liver performs some very important function in the economy of the fœtus. From observing the great disproportion which exists between the size of the liver and the hepatic duct, and the quantity of bile secreted, Bichat was led to conclude that the liver had some other function to perform than the secretion of the bile. Compare, he says, the size of the kidney with the quantity of urine secreted, and you will draw this inference; but he confessed that he was totally ignorant of the nature of this function of the liver.

The bile has usually been regarded as an excrementitious fluid, the extraction or separation of which from the blood serves the purpose of maintaining it in a condition fit for the support of life, and that the liver accomplishes this purpose by extricating carbon and hydrogen from the blood as the lungs do in the adult. The liver has usually, therefore, been regarded in the fœtus as an organ auxiliary to the placenta, and in the adult, to the lungs.

I have examined the liver and intestines in many fœtuses of different ages, and from the appearances observed in these, it seems not improbable that the liver performs an important function connected with the nutrition of the fœtus.

The liver and intestines are visible in the fœtus at a very early period. Between the 2d and 3d month, they are copiously supplied with blood, and during the whole period of gestation they occupy a large portion of the abdominal cavity. The pancreas and spleen

can also be distinctly perceived between the 2d and 3d month after conception, but they are sparingly supplied with blood, and they remain small and imperfectly developed, during the existence of the child in utero.

In all the intermediate periods from the 4th to the end of the 9th month, the small intestines are much more vascular than the stomach and great intestines. The mucous membrane of the upper portion of the small intestines is of a bright rose red colour; while that of the ilium and colon is comparatively pale and bloodless. In a foetus of eight months, the length of whose body was 18 inches, the small intestines, when fully extended, measured 9 feet 6 inches, and the great intestines 2 feet.

The substances contained in the stomach and different portions of the intestinal canal I carefully collected, and they were analysed by Dr. Prout, who found that in their composition they bore a striking analogy to the contents of the alimentary canal of the adult, where the processes of assimilation and absorption are performed.

The stomach of the foetus is usually distended with a semi-transparent, ropy, mucous, and occasionally ascescent fluid, without any sensible admixture of albuminous or other apparently nutritious matter.

In the duodenum and part of the remaining portion of the small intestines, there is uniformly present, adhering closely to the mucous membrane, a semi-fluid matter, possessing properties decidedly of an albuminous character, and having an orange or pink colour. This matter is always found in greatest abundance around the papillary projection, through which the common duct of the liver opens into the duodenum.

In the lower half of the small intestines, the quantity of this albuminous matter is greatly diminished, and near the colon it almost entirely disappears. The colour also of the contents of this lower portion of the small intestines is different from that noticed in the contents of the duodenum, being of a greenish tint, and assuming more and more the characters of the meconium as the distance from the origin of the colon diminishes. These different substances are generally found slightly ascescent. The great intestines are much more distended than the small intestines, and contain throughout a dark green homogeneous, generally neutral, or slightly alkaline fluid, in which no albuminous matter can be detected, and which is to be considered as excrementitious.

The absence of albuminous matter in the stomach of the foetus, its invariable presence in the upper half of the small intestines, its gradual diminution as we proceed downwards, and its disappearance in the colon, are circumstances which, viewed in connection

with the great length of the small intestines already noticed, seem to prove that the absorption of some nutritious substance takes place from the intestinal canal in the latter months of pregnancy, in like manner as it does after birth.

The observation, that the lacteals contain a similar fluid, would be sufficient to render the preceding physiological view a matter of demonstration. In no instance, however, have I succeeded in detecting these vessels in the mesentery of the human foetus, though I have perceived them distinctly in the mesentery of the calf. The late Professor Bennet, in one instance, saw these with me in the mesentery of a calf of seven months; and the case of a child born with deficiency of the abdominal parietes has been recorded by M. Adelon, in his work on Physiology, in which the lacteals were observed, at the time of birth, to be distended with chyle.

The source of this nutritious matter in the upper part of the small intestines of the foetus was the next subject to which my attention was directed; and from having observed in every instance the same orange-coloured fluid, in the small intestines, collected in great abundance near the orifice of the ductus communis choledochus; and taking into consideration the magnitude of the foetal liver, and the large supply of blood which it receives from the umbilical vein, it appeared to me reasonable to infer that this viscus must be the source of the matter in question. Additional weight was given to this conclusion, by having detected, in two instances, in the hepatic duct, the presence of a fluid possessing, not only some of the sensible, but also some of the chemical properties of that which was found in the duodenum.

According to the preceding view, absorption takes place in the placenta of certain nutritious matters from the maternal blood, which are carried along with the blood of the umbilical vein to the liver. If there circulates through the substance of this organ, that an albuminous or chylous fluid may be formed and poured into the duodenum, there to undergo changes similar to those which are observed in adults.

Functions of the foetal kidneys.—In the works of systematic writers on physiology, there is little or no positive information contained respecting the functions of the kidneys previous to birth. Haller, Blumenbach, Meekel, Bostock, and Mayo, have scarcely alluded to the subject, and Magendie states that the condition of the foetal kidneys has not been ascertained. All the glands employed in digestion have a considerable volume in the foetus, and possess some activity. The action of the others, he adds, is little known. It is not known, for example,

whether the kidneys form urine, or whether this fluid passes by the urethra into the cavity of the amnion. Abernethy was of opinion that the kidneys did not secrete urine till after birth, though some of the older writers believed the liquor amnii to be chiefly formed of the urine of the fœtus.

The following facts seem to demonstrate that the kidneys of the human fœtus, like the liver, intestinal canal, and thymus gland, are in a state of activity, and perform each their respective functions, prior to birth.

On the 2d of January, 1835, Mr. Hay, of Osnaburgh Street, attended a patient who was delivered in the eighth month of a still-born female child. It had a double hare-lip, both its feet were clubbed, and the abdomen was so large that it passed with difficulty through the pelvis. Mr. Hay examined the body on the following day, and he found the distension of the abdomen to arise from an accumulation of fluid within the kidneys, produced by an impervious state of the ureters. The right kidney, which resembled a thin cyst filled with a watery fluid, was larger than the head of the child; the left did not exceed half this bulk. Both kidneys were removed from the body without the fluid they contained having escaped, and were in that state presented to me by Mr. Hay. I made an opening into the pelvis of the left kidney, and $\frac{3}{4}$ iv. of a fluid resembling urine flowed out; the pelvis of the right kidney contained nine ounces of a fluid having the same appearance, which was collected and given to Dr. Prout for analysis. [The kidneys and impervious ureters were here exhibited.] The results which Dr. Prout obtained are stated in the following letter:—

"Dear sir,—I send a short account of the fluid from the kidney of a fœtus in whom the ureter was found obliterated.

"The fluid was of a deep brown colour, somewhat like diluted porter or table-beer; transparent, and without any remarkable smell. Specific gravity about 10·12, very slightly acid.

"On exposure to heat it became opaque, and deposited flakes of albuminous matter, which was next examined, by the addition of an acid. The deposit was of a deep brown colour, the separated fluid nearly colourless, and deposited on cooling a considerable quantity of lithic acid crystals.

"When evaporated to dryness, and treated with alcohol, that menstruum was found to take up a principle strongly acid, and which assumed readily an imperfect crystallized form. I cannot venture to give this principle a name: it somewhat resembled the acid called amniotic, or rather allantoid, in some of its properties, but differed from it in others. The alcoholic solution gave, at first, faint and somewhat doubtful, but after-

wards unequivocal traces of urea. After the albuminous matter was separated, ammonia produced a deposition of triple phosphate.

"These results prove, beyond a doubt, that the fluid was of a urinary nature, and render it probable that, as the liver in the fœtus secretes bile, so the kidneys secrete urine long anterior to birth; and that in a perfect state of the organs this fluid is constantly escaping through the bladder, and mixing with the amniotic. This fact has been often suspected, or rather taken for granted, but has never, to my knowledge, been proved.

"I send a portion of the fluid containing a deposition of lithic acid crystals.

"W. PROUT.

"Sackville Street, January 9, 1835."

Supra renal capsules.—The supra renal capsules are situated at the upper part of the kidneys, and united to them by cellular membrane. They are of a triangular form, and are flat before and behind. Their surface is of a yellow colour, and marked by irregular fissures. Some anatomists consider them as two prolonged contiguous cavities, and state that they are filled with a white albuminous fluid. Meckel thinks the appearance of a cavity in them is artificial. They have no excretory duct. They are visible in the embryo at two months, and they diminish after birth. Their arteries are from the diaphragmatic and renal, and other nerves from the great sympathetic. The supra renal capsules are sometimes very small or wanting, coinciding with an imperfect development of the brain. This often accompanies deficiency of the brain, and congenital hydrocephalus.

Until the seventh or eighth month, the *testes*, covered with peritoneum like the ovaria, are situated immediately below the kidneys, or the fore part of the *psosæ* muscles, and by the side of the rectum, where it is passing into the pelvis. In the course of the eighth month they usually descend into the scrotum, and sometimes in the seventh I have found them out of the abdominal cavity, and in the upper part of the scrotum.

There are, upon the table, a number of embryos and fœtuses of all ages, from the end of one to the end of nine months. If you examine these carefully, you will not find much difficulty hereafter in fixing the age of fœtuses that you may see with sufficient precision. Not only in the size, but in the general appearance, you observe what a marked difference there is between an embryo of two and four and a fœtus of seven and nine months. At the full period the fœtus usually weighs eight or nine pounds, and measures about a foot and a half. The head is the largest and heaviest part of the fœtus, and therefore it is usually the most depending part, and lies over the cervix

uteri, while the nates are at the fundus. The chin rests upon the thorax, the arms are placed over the chest, and the knees are drawn up to the abdomen, as represented in the illustrations to Lecture XII. This foetal skull, you see, is of an oval shape, and measures about four inches from the forehead to the occiput, and three between the parietal protuberances. The bones of the cranium, you observe, are not united together as in the adult. Between the occipital bone and the two parietal bones there is a triangular space left, called the posterior fontanelle. The sagittal suture runs forward between the parietal bones to the anterior fontanelle, which is larger than the posterior fontanelle, and has a quadrangular shape.

These are all the observations I have to offer on the anatomy of the gravid uterus, which is the very foundation of midwifery.

CLINICAL LECTURES,

Delivered at St. Thomas's Hospital,

By FREDERICK TYRRELL, Esq.

Lecturer on Clinical Surgery at St. Thomas's Hospital, and Senior Surgeon to the Hospital.

On the Principles of Diagnosis and Therapeutics.

GENTLEMEN,—You will not have forgotten that, in the two preceding lectures, we addressed ourselves especially to the discussion of those preliminary and more general questions which constitute the groundwork of the practical diagnosis of disease. In all instances the *evidences* which proclaim the existence of an unnatural change in, or state of a part, whether this be concealed from open view within the cavities of the body or more accessibly situated on its exterior, may be regarded under two departments—that, in the first place, which is conveyed by the verbal statement of the patient and his friends—that, in the second place, which the surgeon develops and collects—not by the exclusive interrogation of the patient, but by the employment of his hands, eyes, and ears. The word *subjective*—the adjective of the *subject* relating—was employed to characterise the former—that of *objective*, the substantive being the *object* or sign sought, was used to distinguish the latter. In regard to the first, the evidence itself may be incorrectly presented, or erroneously estimated; with reference to the second, the surgeon may misobserve a phenomenon, or misinterpret the character of an actual fact. In the former case, the evidence itself may be false; in the latter, the fallacy may affect the conclusions of the observer. In order to the complete consideration of these elementary principles, which undeniably hold a re-

lation as important and intimate to the prompt and certain recognition of the signs of morbid action, as familiar acquaintance with the alphabetic elements of a language bears to the faculty of reading, speaking, and understanding it, it becomes necessary to advance to another stage of inquiry, and investigate with especial care those states or conditions of the general system which are capable of exercising a more or less obvious influence upon the character and phenomena of disease: in one instance, perhaps, modifying its latent essence, while its distinctive indications continue unaltered, and conversely, in another, obscuring its external characteristics under the veil of some trivial change, while its real nature continues the same. You will remember that incidental notice has already been taken of those two circumstances, which every scientific surgeon paints in prominent relief among the incidents of every case submitted to his judgment. Is this case exclusively *constitutional*, or exclusively *local*, and how far are the characters of *both* varieties mingled and combined in its history, are inquiries calculated to kindle in the mind a train of reflection, with reference to the subsequent plan of treatment, of the highest possible consequence.

But recollect, that the abstract words “constitutional” and “local,” which so eruditely resound in every theatre in which medicine and surgery are taught, from the period of the Abernethian blue pill and black draught to the more verbose learning and formal refinement of our own day, bear in themselves the impress of no practical significance; they are arid and arbitrary symbols, which can neither transform doubt into firmness of purpose, nor hesitation into confident and well-directed action. The word *constitutional* occurs in the anxious investigation of an ambiguous case, and the mind at once enters a new and comprehensive, but withal a definitive sphere of examination. The term *local* presents, as a signal to a more direct and exclusive concentration of attention to a narrower region of inquiry, which embraces only a limited number of particulars.

Under the head of the *constitutional agency*, so far as it imparts its distinguishing character to any existing disease which is brought under the view of the surgeon, I propose to submit to you a few reflections which a prolonged course of practical observation has enabled me either to develop, correct, or modify. It would result neither in permanent profit nor pleasure to indulge in attempting to divest of their vagueness and subtleties the various and contradictory definitions which the technical lexicographers of our science on different occasions have advanced. There is confessedly so much tota-

lity and *collectiveness* denoted by the word *constitution*, that in order to be intelligible, the exposition must be matter of fact, and familiar. The *organismus*, in all instances, is compounded necessarily and invariably of the same elements. The osseous—the muscular—the nervous—the vascular—the lymphatic—are the component systems by the orderly and determinate association of which the animal body is formed. But since the *working*, as much as the external proportions of this organism, must be regarded in the light of a *resultant* produced by the separate and simultaneous operations of different yet mutually dependent systems, it is obvious that whatever modifies or alters the efficiency of any *one* must entail a corresponding *stamp* upon the *complexion* of the *resultant*. This complexion or external manifestation it is which constitutes the exponent of the internal and hidden peculiarity. Suppose that, in order to produce a certain compound colour, the artist combines in definite proportions several elementary colours, and the resultant desired be obtained. If these constituent colours be free from all impurities, and employed in precisely the same proportions, the anticipation is confidently entertained that however frequently the experiment be repeated, the same consequences will follow. But suppose that some article of inferior quality be introduced into the compound, the colour of the mass will deviate from the standard of purity in exact ratio to the extent to which that one ingredient was contaminated. With reference to the living system, conceive that a limb is amputated, a wound inflicted, or a poison inoculated, the integrity of the *whole* system is destroyed, from the injury thus produced. This local infliction acquires a *character* which the peculiarity of the general system determines. Recur to your memories and case-books for examples of those numerous cases in which men, long abandoned to some habit of great excess either in eating or drinking, become the subjects of injury or operation. Whatever may have been the health previously enjoyed, a change of the most obvious description immediately supervenes, for the severity of which the injury or operation is insufficient to account. What can exceed the importance of ascertaining with accuracy and promptitude the *nature* of the constitutional influence which threatens thus the rapid destruction of the limb, or even endangers the life of the patient?

Suppose a poor boy, squalid and debilitated by deep-rooted scrofula, to sustain a blow upon the knee, or a fracture of the leg. Unless the idea were mysteriously fostered that the part affected, or limb injured, was altogether independent of the body to which it was appended, how could a single hope be

entertained that recovery could occur without the tone and vigour which a properly-regulated course of nourishing and stimulating diet would impart to the system? I have known, on repeated occasions, a trivial local disease assume a most obstinate and unaccountably chronic character, until, by specifically ascertaining the exact habit, or what particular luxury the *thirst* or *appetite* of the patient would induce him to seek, and permitting him an almost unrestrained recurrence to his old practice, the proper energy being again given to the constitution, the local mischief vanishes with a quickness equalled only to the intractableness of its former character. In many instances nothing but *gin* will sustain the exhausting powers of the system. In such cases it will always be found that this was the gratifying beverage to which preference was given before the commencement of the period of confinement.

Those of you, gentlemen, who have afforded me the pleasure of your company around the wards of this hospital, have, I have no doubt, frequently heard me, in remarking upon the state of the patient, employ the expressions—*above par* and *under par*—with reference to an absolute or relative measure of restorative or remedial power which the system may possess. The former expression alludes to that state in which the energies are *more* than sufficient to produce the required effect upon the part injured or diseased: the other signifies the condition in which the constitution is *minus* the necessary vigour. Many of the diseases of the eye, especially of the more superficially placed of its tunics, present the most infallible marks by which, especially, these two opposite conditions of the system may be at once recognised and understood. Ophthalmic surgery abounds with examples in which inflammation of the conjunctiva may happen in *one* individual under the most unequivocal circumstances of inflammatory action, which requires for its relief the most prompt and active antiphlogistic measures. In another, the very same apparent *local* action would require for its removal the use of nutritious and tonic remedies—the preparations of bark and iron, and the moderate administration of stimuli. But the question of greatest value and interest which the student can propound respects the *signs* and *appearances* by which the existence of either of these states of the system is to be readily and surely ascertained.

What is the appropriate plan of treatment in this case—the depressing or the supporting—wine and nourishment, or the lancet and purgatives—is an inquiry which is always important, but not always easy of decision.

The countenance has its meaning; it goes far to express the condition of the body, the standard of health. The pulse has its strength

and weakness, and is an important auxiliary, and not unfrequently a paramount evidence, in regard to the measure of the system's power. The *status* of the mucous tracts, the surface of the body, the nervous centres, the muscular system, and a manifold variety of other objects, under the open view of the observer, speak a language which all may read and study. There is, notwithstanding, confusion, doubt, and difficulty, which this very "multiplicity of tongues" appears to occasion, which oftentimes render it more embarrassing to adjudge rightly the nature of a case, than if the mind were allowed only the guidance of a single and obscure little symptom.

Think yourselves called upon to decide, under important and anxious circumstances, on the real character of one of those anomalous cases of *intestinal irritation* which my distinguished colleague, Dr. Marshall Hall, has so clearly and masterly elucidated. When the system is ready to be kindled into a state of excitement, which of all others most intimately and remarkably simulates that which belongs to unequivocal inflammation, the patient may receive a harmless wound upon his finger, a trifling fracture: at once the normal equilibrium of his system is shaken—the pulse rises in frequency—the surface becomes dry, the tongue parched and loaded—the bowels constipated—the countenance anxious—the head may violently ache—the patient altogether is restless and irritable—what should be done? Dr. Hall would at once say, place the patient in the upright posture, and bleed him to incipient syncope. If the case really be one of *simple irritation*, the patient will faint before *ten ounces* will have escaped; if of *actual inflammation*, *twenty* will scarcely produce the same result.

Gentlemen,—If this distinction, this proof, be correctly founded, which it certainly is, can any thing exceed the value which it confers upon the resources of our profession? It imparts a precision and certainty to diagnosis which invest the practical departments of medicine and surgery with the elevated attributes of real science. Acquaint yourselves in every possible way with its meaning and its tendency—study, in conjunction with Dr. Hall's work on Diagnosis, the admirable volumes of learning and practical discrimination which my late colleague, Mr. Travers, has presented to the profession upon a subject closely allied to that which we are now discussing, and you will arm yourselves to a great extent against the perplexing realities of actual practice. I have long addressed myself to the study of those substantive distinctions which mark the two conditions of plethora and debility, under which we are required to combat the results of injury or the consequences of disease; and it is upon

the confidence and persuasion that long experience has given me, that I venture to invite especial attention to one distinctive circumstance which Dr. Hall has almost altogether overlooked. Not a single doubt is left upon my mind that true inflammatory or plethoric excitement of the system, under the conditions of local disease, communicates to the pulse a definite and constant character, which is that of compactness and incompressibility, while the opposed system of debility and irritability is characterized with equal constancy by a looseness and compressibility of the pulse, which it is almost impossible to misconceive. Many theoretical writers have dwelt upon the incompressible character of the pulse in association with the general evidence which indicates the propriety of blood-letting; but I feel anxious, because convinced of its value in practice, to inculcate the fact that the signs afforded by the pulse alone are frequently, when intelligently apprehended, quite enough to explain away doubts and establish the diagnosis. Notwithstanding the marked presence of equivocal and suspicious signs of inflammation of a *plus* or *sthenic* description, if it can be satisfactorily proved that the pulse possesses all the characters of looseness and compressibility, it may be inferred with certainty that the antiphlogistic course of treatment will result in the injury rather than the benefit of the patient. Here, then, is a diagnostic test of definite and appreciable value, which is certainly less objectionable, because more readily applied, than the method of blood-letting recommended for universal adoption by Dr. Hall. At all events, it can be affirmed without exaggeration, that in every example in which the quantity of blood withdrawn appears to attest the inflammatory nature of the case, the evidence of the *pulse* should be required to *add* rather than *subtract* from the clearness and weight of the proof. On the other hand, in those other cases, in which the propriety of blood-letting, even to the extent of a few ounces, is questionably admissible, the indications of the pulse may acquire paramount value. On the first favourable opportunity, I shall endeavour practically to explain and illustrate the peculiarities of the pulse, to which I have now only directed your minds. It may be desirable, however, at this time, to afford the assistance which verbal and diagrammatic definition is capable of giving with respect to the conditions of which I have spoken. The compact, full, and incompressible pulse, communicates the sensation of a single and defined pressure upon the finger. The *loose* and compressible variety gives the idea of a cylindrical body with irregular outline acting obscurely upon the finger.

This explanation may be rendered more intelligible by conceiving the two sensations

described to bear some analogy to the outline of the arterial vessels as they beat in the two cases; if, indeed, analogy can be spoken of as subsisting between things felt and things seen.

FIG. 1.

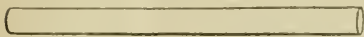
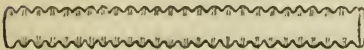


FIG. 2.



In one case, fig. 1, the outline is defined, equal, and uniform, and the vessel bounds against the finger with a compactness which produces a corresponding *singleness* of sensation, leaving upon the finger no *residual* impression. In the other case, fig. 2, the coats of the vessel impart the idea of imperfect and incomplete contraction around the contents, and may admit of a nautical comparison. The first is a uniform and well-distended cylinder, and may be compared to a *sail*, rendered equally convex by a favourably acting breeze; the second, the sides of which are as irregular as its beat is diffused and imperfect, may be likened to the same *sail*, with the breeze acting not upon its broad surface, but cutting its sides, leaving it loose, with the canvas floating irregularly, in small, imperfect, horizontal, undulations in the wind.

If the idea of the existence of a power to support or *resist* compression, or the *absence* of such a power of resistance, more or less completely, be associated with the notion which I have attempted to convey, the *pulse* which marks *power* in the system may be discriminated from that which denotes the contrary condition of *debility*.

It is not my part to attempt the description of any of the infinite shades of difference which the pulse assumes under the varied conditions of disease to which the body is exposed. But there is certainly one formality—it may be styled custom—which prevails in the practice of our art, with reference to which I can scarcely withhold a plain and ungarished remark.

If you have not enacted the part yourselves in your intercourse with the senior members of our profession, whether in the provinces, or in the centre of learning itself, the metropolis, it must have fallen under your notice to have observed a practitioner, with his watch before his eye, compute the frequency of the pulse, with a gravity as Socratic—a significance as profound—as the occult philosophy of the middle ages itself. Without remotely intending the slightest indignity, or smallest disrespect to those general practi-

tioners who constitute the great body, as well as the respectability of our profession, I must declare to you, that if any custom more than another prevail in our profession, which is stamped with an air of empty learning and formality, it appears to me that the practice of taking out the watch to count the frequency of the pulse deserves the fullest measure of a reputation so enviable.

Gentlemen, on the abstract ground of augmented or diminished frequency of the pulse, would you say, even from the necessarily limited experience which you have yet had in your profession, that any given case partook or not of an inflammatory character? Recollect that increased frequency is by no means a necessary accompaniment of the features of compactness and incompressibility. Listen to the following case, and you will feel the truth, as well as the importance, of what I say.

An immediate relative of my own became the subject of severe pain over the abdomen, and other marked signs of inflammation of the peritoneum.

In simple frequency the pulse amounted to no more than 70 in a minute. The case assumed a threatening aspect, and the opinion of the late Dr. Babington was obtained. At that time, (like yourselves), I was a sanguine student in my profession, and held in merited respect the judgment and authority of Dr. Babington. He visited the case, and came away, after having given to the friends the most favourable opinion—on what ground?—on the delusive one that, as the patient's pulse was no more than 70 per minute, every apprehension of danger might be safely dissipated. I met my respected senior, when he encouragingly remarked that the pulse was *only* 70! But I then informed him that this lady, although the possessor of a vigorous, strong, and active mind, in full health, had a pulse which afforded no more than 50 beats in a minute. His opinion at once underwent a change, and he was induced to re-examine the case, and the step was determined upon of taking away blood.

Many ounces of blood were abstracted before the occurrence of syncope, and the symptoms were immediately much mitigated. It is impossible to doubt the circumstance, that the ultimate recovery of this person was due to the prompt manner in which blood-letting was adopted. Notwithstanding the contra-indicating doubt which the unusual slowness of the pulse was calculated to suggest, I emphatically urged the propriety of its adoption. In this instance how lamentable would have been the consequences of implicitly relying upon the isolated evidence afforded by the number of the pulse.

It were easy to multiply examples of the same delusive character, in which a false

opinion has been given, by attaching undue importance to the simple circumstance of frequency in the pulse. The practice of taking out the watch is obsolete, and rationally extinct. You may rest assured, that, as 'simplicity is the handmaid of truth,' so the external shew of magic gestures, and mesmeric ceremonies, is calculated as little to sustain the respectability of the medical profession, as it has gone far to reduce its social standing, and impede the spread of its usefulness.

But the freedom with which I have condemned the practice of attaching consequence to the isolated feature of the *number* of the arterial pulse, to guard against the possible misapprehension of my meaning, may require a few remarks in qualification. The columns of statistical proofs which physicians have recorded must be accepted as indisputable and weighty guarantees for the well-founded character of the general belief, that certain diseases, for the most part, are marked *cateris paribus* by the same qualities of the pulse. In general language it may be certainly affirmed that all unquestionably inflammatory affections of important organs are characterized by an augmentation in the frequency of the pulse; and equally, that certain other morbid conditions of the body might be arrayed into a definite category, which are accompanied by unusual slowness of the arterial pulse. It scarcely requires to be stated that the frequency of pulse during the period of infancy is greater than in that of adult life. The numerical amount of the pulse in the female exceeds that in male. The sum of the pulse is sensibly affected by the season of the year, the period of the day, the position of the body. By the statistical researches of MM. Quetelet, Billard, and Piorry, and especially those of Dr. Guy, Falconer, Graves, Sir W. Burnett, Dr. Joy, and others in this country, facts and data have remarkably multiplied and accumulated for the approximate determination of averages in the frequency of the pulse under the several circumstances of age, sex, and disease.

It is impossible to entertain hesitation in admitting the authenticity of the numerous cases which are published, on the authority of many of the observers whose names I have mentioned.

Although in an infant of a week or a fortnight old the mean frequency of the pulse has been calculated at about 128, cases have been recorded by Dr. Joy and Dr. Guy, in which disease has raised this sum to 200 and 250. The average for the adult male is ordinarily given at 70; yet examples are presented us by Floyer, Heberden, and Fordyce, and they might be readily multiplied, in which disease, and that of a serious inflammatory character, was compa-

tible with a pulse which did not exceed 50, 30, and 60 beats in the minute. Numerous instances, again, of a contrary character, might be collected, in which, under circumstances of striking similitude, as regards sex, age, habit of body, and disease, the frequency of the pulse was considerably beyond the average standard. Let me, then, repeat the inculcation which it is so desirous for you thoroughly and completely to understand, that in computing the number of the arterial pulse, in consequence of the frequency of individual variations from that which the general consent of practitioners may concede as the standard or mean, the *fact* of its frequency in the abstract is entitled to little, and that very questionable value, as an exponent either of the character or actual condition of disease. As an absolute datum it deserves no dependence; as a relative item, viewed in combination with the general evidence which the examination may elicit, it is calculated to ensure the ends of a truthful diagnosis.

Conceive yourselves in anxious attendance upon a doubtful case, with the pulse beating at the rate of 90 or 100 per minute. Regarded as a detached particular, it obviously can claim no other than the most inferior value, for under the circumstances of complete health the pulse of this very individual may amount nearly to the same number of beats. But suppose, by a credible informant, it were stated that in health this person's pulse was generally as low as 65 or 70, below that which statisticians assign as the numerical mean, the whole complexion of the case undergoes at once a serious change: now the frequency of the pulse may be received as an attestation of danger—it may affect, fundamentally, the treatment—it may provide the attendant with important and well-founded means for the formation of prognosis. But consider the opposite supposition—that a practitioner is required to pronounce judgment upon the character of a case when no information whatever can be obtained in relation to the history of the pulse, whether it furnishes 50 or 100 beats. How is its meaning to be practically rendered? What interpretation could be confidently put upon the evidence of its frequency in the abstract? Can you not now perceive that the watch and its minute-hand are nothing more than the decorative appliances of the ceremonious practitioner—the imposing paraphernalia of the mysteries of the medical art?

Since, therefore, the indications of the pulse, when viewed as an index or measure of the state of the circulating system, claim only an inferior and inconstant value as regards the number of its beats—and since the frequency of the heart's pulsations is susceptible of so great variations under the agency of causes, as multifold in amount as

they are as yet imperfectly understood—no lesson can be more wisely taught than that which diverts the eye of the student from his watch, and directs his undivided attention to the qualities rather than the number of the pulse.

THE PATHOLOGY OF BURNS.

To the Editor of the Medical Gazette.

SIR,

IN Mr. Erichsen's paper on the Pathology of Burns, in the last number of the MED. GAZETTE, there occurs the following passage:—"Mr. Curling, in his very interesting paper on Ulceration of the Duodenum consequent upon Burns, published in the Medico-Chirurgical Transactions for the present year, accounts for the very frequent occurrence of this lesion by supposing that Brunner's glands endeavour, 'by an increased action, to compensate for the exhalation of the skin, and that the irritation consequent thereon often leads to inflammation and ulceration.' This appears to me a highly probable supposition," &c.

From this extract it is to be inferred that Mr. Erichsen regards Mr. Curling's explanation as original; and I have not the smallest doubt that when the latter gentleman gave that explanation, he himself believed the same thing; but justice to myself requires me to state that more than two years ago I had not only *formally* stated, but likewise *published* the same views. After noticing that derangements of the skin may cause symptomatic gastro-intestinal disease, I proceed as follows:—"The skin, as an extensive sensitive and secreting surface, has important relations to two grand sets of central organs: to the cerebro-spinal and sympathetic centres, in the first place; to all the secreting *mucous* surfaces, pulmonary, intestinal, vesical, and uterine, in the second. *The effect of an extensive scorch or scald will illustrate the sensitive and secretory relations of the skin.* In the event of such an accident, the nervous centres are powerfully irritated, or else exhausted; and it, at the same time, most commonly happens that one or other of the mucous canals is inflamed. We, in this work, have only to do with the *gastro-intestinal mucous membrane.* This, then, especially if there have

been predisposition to disease, is not uncommonly cast, by such an accident on the skin, into prompt and acute inflammation; and, at least, rarely fails to manifest some considerable degree of secondary derangement. Now we are to attend to the rationale of this effect. *It may happen altogether independent of the nervous and vascular excitement consequent on the accident to the skin;* that is, although, no doubt, the excitement of the nervous and vascular systems aggravates the secondary inflammatory affection of the gastro-intestinal mucous surface, yet that affection may be more directly due *to the fact of a large excreting surface of another tissue* (to wit, the cutaneous) *being thrown into a state of disorganization*, by which the function of excretion, over a large part of it, being abolished, *a sudden vicarious duty is thrown upon the gastro-intestinal mucous surfaces*, which they, especially if already in a morbidly predisposed state, may not be able to undertake, without symptoms of excitement verging on inflammation. It is on the same principle that the premature suppression of eruptions, as of small-pox, measles, scarlatina; of hæmorrhages, as of piles; of natural discharges, as of the menses, milk, or lochia; the rash cure of ancient sores, and even morbid states of the skin, by preventing perspiration—often develop metastatic disease of the stomach, liver, pancreas, spleen, or intestines."—*Derangements, Primary and Reflex, of the Organs of Digestion*, pp. 312, 313.

Requesting the favour of a place for the above in the columns of your distinguished journal, I am, sir,

Your obedient servant,

ROBERT DICK.

9, Upper John Street, Golden Square,
Jan. 23, 1843.

HOMŒOPATHY.

To the Editor of the Medical Gazette.

SIR,

IN your periodical of the 6th inst. a statement appeared relative to the medical treatment of the late lamented Countess of Denbigh, which has since been copied into various journals. The gentleman whom it more immediately concerned seemed disposed to pass it over with the contempt which such a fabrication me-

rited, but others thought that the pursuance of such a course might lead the public to imagine that its non-contradiction was a tacit acquiescence in its truth.

A plain statement of the case *ab initio*, would be perhaps the best refutation of your correspondent's assertions; but that I do not feel myself at liberty to enter upon. Under a mask of mock condolence, and with a useless suppression of the name, he has paraded the misfortune of a family before the public, and torn away the veil from the solemn sanctuary of private grief.

With his motives, or the opprobrious terms he levels at homœopathy, I have nothing to do: I feel no inclination to enter the lists of controversy with an anonymous writer.

Your correspondent speaks of facts. For these facts he has drawn almost wholly upon his imagination; his allegations are easily disproved by an appeal to authorities, upon which the shadow of a doubt cannot rest, viz.,—Mr. Barnes, the accoucheur, who attended throughout the case, and Mr. Fincham, who officiated at the *post-mortem* examination; neither of which gentlemen are "Dr. Hahnemann's disciples."

I will now proceed to unweave this web of falsehood thread by thread, and then allow the profession to judge for themselves.

To quote from "M. D."—

"Though in her confinement, 18 months ago, she nearly lost her life by homœopathic treatment."

At the period alluded to, the noble lady was under the care of Mr. Barnes, took no homœopathic medicines, (Dr. Dunsford being absent), and the case was brought to a satisfactory termination under that gentleman's auspices. Dr. Dunsford having, in conjunction with Mr. B., attended her in her two previous confinements, in which, from homœopathic treatment during the period of gestation, her recovery was remarkably rapid.

Again,—

"This lady was of a very plethoric habit."—False!

Messrs. Barnes and Stone always considered her to be the very reverse, and that after her confinements she required stimulants and carriage exercise.

What right has "M. D." to assume,

that watching a plethoric habit during the period of gestation is "against the principles of Hahnemann?" A reference to our medical works is quite sufficient to establish the contrary.

"M. D.'s" next assertion, as to the non-effect of the medicines given in *checking* the convulsions, is disproved by fact; the medicines acted satisfactorily; but the case, as the autopsy proved, was beyond the reach of art.

We now come to the covert insinuation that no accoucheur was present.

"By accident, a medical man of some eminence was in the house, and was requested to see the case: he pronounced the lady to be suffering under puerperal convulsions, requiring from those in attendance the most active and energetic measures, and the assistance also of a skilful accoucheur, to forward the delivery of the patient," &c.

This "medical man of some eminence," was Mr. Barnes, the usual obstetric of the lady in question, who was actually present some time before the arrival of Dr. Dunsford.

"The homœopathic doctors spoke confidently."

So far was this from being the fact, that the prognosis of all the medical men present was, from the commencement, decidedly unfavourable.

"Apoplectic coma followed."

Here, again, "M. D." is at fault; coma did not ensue.

The concluding remarks are scarcely worth notice. Mr. Barnes, a gentleman of long practice and acknowledged skill in the obstetric branch, was present, and although, before the arrival of Dr. Dunsford, from some symptoms, he judged the abstraction of blood necessary, yet, upon feeling the pulse, he deemed that such a course would have been almost immediately fatal.

The insinuation, that any mode of treatment would have been successful, is amply disproved by the *post mortem* examination subjoined, made not by the disciples of Hahnemann, as falsely alleged, but by two allopathic practitioners, in conjunction with the homœopathic physician, Dr. Dunsford.

COPY.—*Appearances observed on examining the Head of the late Countess of Denbigh.*

"Very little blood in the head. Dura

mater rather congested, but without inflammation, and more adherent to the bone than usual. Great thickness and opacity at the back part of the longitudinal sinus, at its junction with the lateral sinuses. A small tumor, half an inch in diameter, and about a quarter of an inch thick.

"Base of the brain congested, particularly about the medulla oblongata, with a small quantity of fluid; the whole of the cerebellum softer than natural, with here and there a portion soft like paste. This state of the brain was the result of disease of considerable standing, and could not be remedied by any particular treatment.

(Signed) G. FINCHAM,
HARRIS DUNSFORD, M.D.
A. B. BARNES.

"December 16, 1842."

In bringing forward the name of Mr. Barnes, I do not wish to fix the slightest degree of responsibility on that gentleman. The whole medical treatment was under the direction of the homœopathic physicians present; and well would it be for the other school of medicine, if all their cases, which terminate fatally, could stand the test of inquiry as well as the present, which has been the cause of so much unjust opprobrium being heaped upon our science. With all the confidence in the superiority of the homœopathic system which a long course of success warrants, we pretend not to infallibility, and only wish our practice to be tested by a fair and ingenuous comparison with the old.

I now leave the case to stand upon its own merits. If your correspondent had thought fit to sign his name, I would not have hesitated to subscribe mine. I am, however, perfectly willing to lay aside my incognito, should he please to adopt a similar course.

In conclusion, and I will borrow the sentence from M. D. himself, "these facts need no further comment; they must be clearly understood, at least by every medical man;"—I may add, by any man of honourable feeling, or even of common honesty.—I remain, sir,

Your obedient servant

A HOMŒOPATHIC PHYSICIAN.

[Our correspondent ought to have sent us his name, as we stated was done by the gentleman to whose letter the above is an answer.—ED. GAZ.]

MEDICAL GAZETTE.

Friday, January 27, 1843.

"Licet omnibus, licet etiam mihi, dignitatem Artis Medice tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

ANALOGY BETWEEN THE DISPENSERS OF INSTRUCTION AND OF MEDICINE.

AT the last meeting of the Statistical Society a paper was read on the schools resorted to by the children of the lower and middling classes in the borough of Finsbury. In the animated discussion which followed this, among other facts it was elicited that the occupation of a schoolmaster or schoolmistress for the classes alluded to is generally followed by persons wholly unprepared by any previous education for that special object; and, indeed, that the occupation is generally undertaken as a source when other means of subsistence have failed: such failure in very many cases being traceable directly to incompetence or misconduct. That this is very frequently the case is known to all who have inquired into the casual instances which have come under their notice. It might, perhaps, have been inferred, even had it not been ascertained, from the gross ignorance often betrayed by the teachers, and the large amount of this quality with which they contrive to store their pupils; for, with all due allowance for the powers of stolid ingenuity in escaping instruction, with which some children are gifted, it is difficult to conceive how so much ignorance could be persisted in, as to overcome the average of youthful instinct for seizing and appropriating ideas, unless the teacher were singularly gifted with the power of withholding or of marring useful information.

We would recommend our younger readers to occupy some of the spare time, which even the shortest midwifery

case throws upon their hands, in questioning the children of their poorer patients. Schooling is to education very much what law is to justice, theology to religion, and physic to health.

The kind and amount of instruction which the labouring man and petty tradesman are able and willing to purchase for their children, bear a great analogy to the kind and amount of medical attendance which the same persons can and will obtain for themselves and their families. The analogy holds good in various ways. In each case the purchaser is no judge of the goodness of the commodity he seeks, nor of the competence of the dealer. In each case certain gross and palpable effects are produced, which show that the vender has something to dispose of, and that the purchaser gets something for his money: the commodity is low priced, and the degradation of dependence on private or public bounty is avoided at a small cost, and there is self-gratulation (justly enough) at having made a sacrifice for a laudable object; but the analogy is strongest in the utter absence of all public guarantee that the dispensers of instruction and of medicine are fit for the office they undertake.

Excellent persons, with ample qualifications, are no doubt to be found amongst them; and when such are employed they make a creditable livelihood, and, while performing a high and useful function, render incalculable benefits to the public. But such instances, it must be feared, are rare, and must, by the most favourable calculation, be considered as exceptions.

The poor go to market badly—they purchase dearly, select injudiciously, and consume wastefully. If this be true of the coarser necessities of material existence, in which they may be supposed to be fair judges, what must

it be of the finer and more subtle elements of instruction and healing?

Restraint and discipline, when they can be brought to bear, work wonders in generating prudence and economy in the poor themselves, and in providing for them the benefits of these qualities in their superiors and directors. The total daily cost of a soldier is about 1s. 8d., out of which is deducted food, clothing, &c. The difference between the comfort and appearance of a soldier and those of a mechanic, earning half-a-crown a-day, will be obvious at first sight, although from various circumstances not appreciable by calculation, it cannot be taken as an exact measure of the difference between the advantages the same persons would enjoy in the different states of control and of independence.

Medical relief, to such of the working classes as come within the limits of pauperism, varies of course very much in quality and efficiency. We do not yet know how bad in quality, or deficient in quantity, the very worst may be; but it cannot be much worse than what the poorer classes may and do obtain when they cater for themselves. They generally, indeed, purchase more amenity and attention, but they often get very little skill, less even in amount and in efficiency than that fractional part of a union doctor's orthodox attainments, which the parish would place at their disposal.

But there is some ground for hoping that the quality of the medical advice obtained for themselves by the poor is improved and improving in quality. The overstocking of our profession with men really very well educated, the illegally obtained experience of the druggist, though themselves symptoms of great evils, are yet not without their advantage to the poor. We would fain hope and believe that very much judicious advice and appropriate medicine

is sold in pennyworths, and that the lessons taught by our greatest men are faithfully applied in places and circumstances which denote a severe struggle between personal respectability and biting poverty.

Assuming the most favourable state of things to exist as to quality, the question becomes more simply one of quantity and of price; and here the situation of the very poor, the objects of charity, is much more advantageous than that of the class just above them. In cities, and indeed elsewhere, except in thinly-peopled rural districts, the pauper does get a fair share of the skill and attention of a qualified practitioner, and a supply of medicine for his need; of each, more than his poor neighbour, not being quite a pauper, can obtain.

In all that is done for him, the authorities who rule his destiny have the advantages which arise from combination and control, and divide those advantages between his interests and their own economy. His medical attendant is subject to control and dismissal, and his guardians are bound—in theory at least—to furnish him with such appliances of diet as his case may demand.

It is difficult, though possible, to administer that public provision for the sick pauper, which the laws of the land righteously consider his due, so badly, that such provision shall not be better than what the labourer can make for himself. It must, however, be very difficult; for the carrying it into effect is, from the necessities of the case, entrusted to persons whose sensibilities have been subdued by witnessing repeated scenes of real distress, and resisting repeated attempts at fraudulent encroachments on the funds of which they are the guardians. Yet the practical humanity of a poor law is allowed, even by those who most doubt its expediency: and though there are abundant reasons why the parish doc-

tor, who is not the object of the pauper's partiality and choice, should seldom be "blessed altogether," there is, perhaps, no parochial functionary who is less invariably execrated. He is unlucky, indeed, or sadly overworked, who can find no opportunities of extorting gratitude and goodwill, by the amount or the manner of his attentions. We are very much mistaken, indeed, if the extreme fastidiousness which leads the pauper to indulge a strong *ex officio* prejudice against the person appointed to alleviate his bodily ailments be not almost exclusively found in cities or large towns, where the parish doctor has to compete in public estimation with the chosen attendant of some wealthy neighbour; his merits must be great, indeed, if they can counteract in the poor man's mind the fascinations of an untried and perhaps unattainable competitor. Where the parish doctor also attends the easier classes, he is found not without honour even from his pauper list.

In large hospitals, and even in many dispensaries, the medical care of the poor is far greater than what they can procure for themselves, far greater even than what can be commanded by any but the easiest classes. All the advantages of forethought and combination, discipline, cleanliness, comfort, arrangement, are obtained, and the economy of time and means are made subservient to the welfare of the patients. The worst managed institution of this kind is better than the home of a sick person, even in the middling ranks of life, and with an economy beyond all competition.

In discussing the education of the lower and middling classes, a contrast is unavoidably presented between the advantages enjoyed by the children of paupers and convicts educated at the public expense, and those enjoyed by the children of the honest and industrious labourer, laudably seeking to

educate his family out of his hard earnings; of course the former are the best off. Almost equally unavoidable is a lamentation, almost an indignant expression of displeasure, that the convict's child should be better off than that of the honest man. From this the transition is easy to a hint, that the labourer might be tempted to provide for his children by becoming a convict,—to pass an examination himself at the Old Bailey, that his son might pass his examination as a normal teacher; that education is a very good thing, but that philanthropists and legislators have applied it at the wrong end. Professional experience and practical good sense at once expose and confute this fallacy, and shew that not the amendment but the regret is applied at the wrong end. What would be said, if the same lamentation were made about medicine, to which it is just as applicable. The inmate of a hospital enjoys well chosen diet, good nursing, warmth and ventilation, with the best treatment which the medical attendants can devise, while the mechanic or tradesman must be content with his own close rooms, and forego the advice of his apothecary until his previous bill be paid. But we do not lament that the poorer man is so well fed, nursed, warmed, and physicked, even if his sickness be as evidently as Falstaff's the result of his intemperance. We do not wish to put out the fires, stop up the flues and the boilers, nor dismiss the physicians and the nurses, till all the honest men in the parish have got well and paid their doctors. We do not regret that the honest man gets so much for nothing, but that others get so little for their money.

What then is wanted, that the classes a few removes above the poorest may obtain, if not the advantages of the rich, at least the advantages of the poor?

First and foremost, combination.—

Skilful combination for laudable objects is one of the highest privileges of the human intellect, and the effects which result from it are among the greatest blessings which that intellect is permitted to confer upon our species. Combination has been the first act which has followed every civil and religious movement which has wrought out any great and good principle.

It is of combination of this kind only that we speak. That such combination is a true and real thing, a great and a good thing, may be inferred with moral certainty from its many counterfeits. There is no fair tablet hewn in the rock of the Church's history, no heart-stirring page in the chronicles of a nation, which does not record as part and parcel of the great things done at that time, some effort to knit men together in the triple chain of knowledge, of wisdom, and of love. The causes of these combinations, their elements remote and proximate, have usually been long working and fermenting unseen to common eyes, till at the favourable moment, the adepts of the time have blended them by an alchemy which only virtuous minds may learn, and pure hands may labour. But no principle however good, no combination however righteous, has been or can be exempt from perversion and misuse.

The tendency to combination was, perhaps, never more general than at the present time. This tendency, after a long season of apathy, has encountered fresh dangers from being brought into disrepute by some of the most hazardous and ill-judged experiments that have ever been tried. But the tendency still exists, and men of energy and patience have learned to add prudence to their other capital qualities. Combination amongst states has settled with the pen, questions that, if tried with the sword, would have deluged the world with blood. Combination, in the form of life insurance, has removed many fami-

lies beyond the hazard of extreme want. Combination has enabled the skilled and frugal workman to establish institutions for the high cultivation of his intellect, and to gratify his taste—so cultivated—by traversing the greatest length of this land for a day's rational enjoyment in the metropolis; and combination is now at work to try, in a peaceable manner, the great question of food and raiment between the landowner and the artizan. These are quoted as mere instances of social problems that can be wrought out by combination. To return to education, and “medicine for the million.”—What the philanthropist and the statesman have effected for the felon and the pauper, the higher classes are effecting for themselves—cheap and good education for their children. Proprietary and public schools supply, under a discipline to which even the proprietors themselves and their customers submit, the very best material and most perfect machinery that the present state of educational science can furnish; and at a cheap rate this material is worked up, by able masters, well qualified and well paid.

Could not something of this kind be done in medicine for the class who most need it?

It is pretty clear that an association of 1000 persons, men, women, and children, taken from any rank of life, say the inhabitants of a single street, for instance, might, for an annual subscription of two guineas per head, maintain, for its own exclusive use, a medical staff of the first quality, as thus:—

Ten nurses, at £30 per year	£300
Two dispensers, at £50 . . .	100
Rent of house and shop . . .	150
Drugs	50
Two general practitioners, at £400	800
	<hr/> 1400

Leaving a balance of £600 for medical luxuries, such as consultation fees, &c.

Nay, an occasional freak of homœopathy or hydropathy might be afforded out of such a “margin.”

Seriously speaking, however, if the public would combine in local associations to obtain permanent medical assistance, and practitioners would combine in districts to attend any member of the association on fixed terms, more persons would seek medical advice, more benefit would be derived from that advice when obtained, more attention would be paid to the preservation of health; and, *valet quantum*, fewer doctor's bills would be left unpaid.

The great obstacle to the self-supporting dispensary is, that the medical officers are few in number, and undersell their neighbours. A little combination might remedy this, and some day no doubt will do so. Whether within the next twenty years or not, and whether the first experimenters will gain or lose, we venture not as yet to predict. Much useful information is contained in a pamphlet entitled “Medical Relief for the Labouring Classes,” by H. Rumsey, Esq. late of Chesham. Valuable arrangements are likely to result from this subject being considered and treated in a conservative, rather than a destructive form. The good sense of individuals has long been directed to it; and in able hands, directed by sound heads, it will probably bring the qualified practitioner and the mass of the people into their just and proper relation—a relation which has been lately much interrupted.

ROYAL ACADEMY OF MEDICINE, PARIS.

THE *Moniteur* contains a list of the honorary Members of the Royal Academy of Medicine, approved by the King. The following are the English physicians and surgeons named in the list:—Dis. Abercrombie, Bright, Sir James Clark, Samuel Cooper, W. Guthrie, Marshall Hall, B. Travers, and W. Lawrence. — From *The Times*, Jan. 21, 1843.

IMPROVEMENTS AT ST. LUKE'S.

THE following resolutions have been agreed to by the Governors of St. Luke's Hospital, in consequence of a memorial presented to the Committee by the physicians on the 2d of December, 1842 :—

“Resolved,

“That your Committee do recommend that the better warming of the galleries of the hospital be immediately carried into effect, as an essential preliminary to the completion of the other contemplated improvements.

“That the appointment of a chaplain, and the fitting up of a chapel be proceeded with, and that the selection of the patients proper to attend Divine Service be left to the physicians.

“That your Committee do further recommend that the internal iron gates in the galleries be removed, and that wooden doors be substituted in lieu thereof.

“That your Committee do recommend that two additional nurses, competent to assist in the laundry, be engaged.

“That the vacant space at the east end of the hospital be laid out as an airing ground, for the noisy patients, agreeably to plan A., submitted to your Committee.

“That in gallery B. on the female side of the hospital, a padded room be fitted up, at the end of the present ‘warming-room;’ and that the rooms Nos. 29, 30, and 31, in the same gallery be separated by wooden partitions.

“That the same arrangements be made in gallery D. on the female side.

“That in gallery A. on the male side, a padded room be fitted up, and that the same alterations be made in this gallery, and in gallery C., as those on the female side.

“That your Committee do also recommend that the bars and wires over the doors of the sleeping-rooms be removed, and a wooden pannel half-high be substituted, and that the present partition in each of the wards across the wings be raised to the ceiling, and that a glazed window be placed in the centre of each such partition.

“Also that the screens outside the windows in galleries A., B., C., and D., be removed, and the glass painted instead thereof.

“That the windows in gallery F. be altered agreeably to plan B. presented to the Committee, for the better lighting and ventilating the sleeping-rooms.

“That your Committee are aware that some of the improvements now suggested will involve great expense, but they feel so fully convinced of the importance of these alterations to the cure, comfort, and care of the patients, and that they will eventually lead to so much benefit to the establishment,

that they cannot allow themselves to doubt for a moment that the General Committee will find the funds for such desirable objects without loss of time.”

ROYAL INSTITUTION.

Friday, Jan. 20, 1843.

A glance into the Professor's Laboratory.

THE first meeting of the members of this Institution occurred this evening, when a very numerous and select audience assembled to greet Mr. Faraday on his appearance. We are rejoiced to report, that our distinguished professor was in high health and spirits. The subject of his address did not consist of any novel facts or principles, but of certain “suggestions,” relating to electric induction, which a consideration of existing facts had brought to the mind of the lecturer, and to elucidate and verify which, he is now engaged in carrying on a series of experiments.

The professor prefaced his “suggestions” with a brief but accurate and lucid summary of all that is known on the subject of induction, which he illustrated by a number of delicate and perspicuous experiments conducted in the manner characteristic of this distinguished chymist.

The lecturer called the attention of the company to the well-known property of the electric fluid or essence, viz. that of accumulating or attaching itself to surfaces. A quantity of electricity was transmitted to the surface of an insulated globe; this was inclosed in two hollow hemispheres, where it was discovered that the electricity had forsaken the globe, and was found on the surface of the hemispheres. A moderate-sized metallic vessel was insulated, and a quantity of the electric fluid communicated to its interior. This, upon trial, was also found to have abandoned the internal for the external surface.

This habit or property he further illustrated by, amongst many others, an original experiment. He had constructed a wire chamber, or vessel of rather large meshes; to the interior of this he conveyed a quantity of electricity, which immediately passed to the exterior. From this surface electric effects could be produced; but from the interior none whatever could be evolved, showing, as the professor justly observed, “the wonderful phenomenon, that this powerfully mobile fluid, which travels at the rate of some millions of miles in a minute, could not return through the open meshes of the net-work, or turn round the circumference of the wire, as a most minute and feeble insect could do.”

But this property of seeking the surface did not characterize this mysterious fluid merely in single bodies, but likewise in systems, or aggregate of similar bodies. To exemplify this truth, the lecturer had caused to be made an apparatus, consisting of a number of metallic balls, fixed upon metallic stems of divers lengths, and emanating from the same basis like the stamens of a flower. Electricity being conducted to each of these balls, it could only be collected from the distal hemispheres, and not at all from the stems and proximal hemispheres.

At this stage the lecturer made several experiments to exhibit the difference between *induction* and *conduction*, and to illustrate particularly the nature of the first. To answer this end, a number of elegant electrometers were employed, by the motion of which the attraction and repulsion of very minute portions of electric matter were made manifest. It was proved by these experiments, that a body negatively or positively electrified, caused neighbouring bodies to be in an opposite state of electricity, and that the effect was unimpeded by intermediate substances. The force of induction was exhibited on the gold leaves of the electrometer, through layers of atmospheric air, of sulphur, of shell-lac, of glass, and of various metals.

A metallic globe being positively charged in the lecture-room, had the effect of putting the heads, faces, and persons of the auditory, as well as the sides of the theatre, into a negative state; and the lecturer stated he could draw a spark from the head of every body present. To prove the truth of this assertion, he had fixed against the wall of the theatre a lawn handkerchief, which, if what he said were true, would be found to be negatively electrified, and have the power of diverging the indifferent and impartial leaves of the electrometer. The result justified the prediction: the leaves did diverge.

The professor directed the attention of the assembly to yet another fact—the indifference and unconsciousness of the human and animal frame to its own electric condition, and consequently to the inductive changes effected in that condition. To make this evident, a white mouse was fastened by the hind leg, and placed on an insulated surface, which was highly charged with electricity, and then discharged. The little animal remained utterly unmoved by these events; but his tail being made the conductor of a small charge, it produced a very lively emotion in him.

The importance of these facts related, the professor said, to the great globe which we inhabit. What was its electrical condition? And what influence had this condition on the well-being of the organic beings placed on its

surface? Pelletier, a bold but experienced inquirer, had assumed that the earth's surface was in a highly negative state of electricity, and that the clouds and surrounding atmosphere were positive in regard to it. Mr. Faraday thought these were fatal objections to this hypothesis. The ascertainment of this fact was a most difficult inquiry, but one of the highest interest: it admitted as yet of no satisfactory solution. A great number of speculative minds were now, however, engaged in the search; and in the number the lecturer himself. As far as his private inquiries had gone, he was disposed to believe that the electric state of the globe, whether negative or positive, arose from the inductive influence of the other heavenly bodies, rather than from that of the surrounding atmosphere.

Finally, the lecturer referred to an anomaly in the condition of the clouds. These bodies consist of agglomerations of vesicles, which, being similarly electrified, ought to mutually repel each other, and consequently immediately to dispel the aggregate cloud; but this was not the case; and the electricity, as had been shown, resided on the surface of the vesicular agglomeration, that is, the cloud. This anomaly Mr. Faraday was disposed to ascribe to the inductive property of the earth's surface, which had the property apparently of counteracting the mutually repellent habits of the similarly electrified particles. To corroborate the probability of his conclusion, a fascies of silver-paper ribbons were affixed to the top of a perpendicular metallic rod, and placed in contact with the conductor of the machine, and immediately the paper rags spread out in the shape of a canopy, illustrating the mutually repellent power of each. But a globe oppositely electrified being brought near had the effect of overpowering the repulsion of the paper radii, and attracting them towards its surface. This Mr. Faraday supposed might be the case with respect to the clouds, which were kept concrete by the induction of the earth's surface. This is as yet but one of the suggestions or suppositions in the professor's mind, and which will probably appear in the course of this year in a matured state, as "a theory of electric induction," in the pages of the *Philosophical Transactions*.

Mr. Secretary Barlow acquainted the members that Professor Faraday's improved health enabled him to promise on the part of that gentleman a more frequent appearance at the lecture desk during the evenings of this season.

Dr. Carpenter, of Bristol, exhibited some curious shells in the library. 1840s.

FELLOWES' CLINICAL PRIZE REPORTS.

BY ALFRED J. TAPSON,

University College Hospital, 1842.

[Continued from p. 568.]

CASE IV.—*Peritonitis, with inflammation of the uterus, marked by great pain and tenderness of the abdomen; pyrexia; the local signs of disease of the os uteri, and profuse discharges of blood and of a dirty greenish fluid per vaginam. Treated by leeching, mercury, iodide of potassium, &c.; the peritonitis cured, and the other complaint much relieved.*

FANNY HUNT, ætat. 23, admitted April 29, 1842, under Dr. Taylor; a young woman of moderate conformation, sanguine temperament, and rather pale complexion; is a native of Leicester, but has lived in town for the last six years, in Sandwich Street, Burton Crescent. Her father died of disease of the heart; her mother is living and healthy; has not lost any relations from consumption or cancer, as far as she is aware. Her habits have been regular, and she has always had sufficient food, and drinks about a pint of beer daily.

Her constitution is naturally good; she used to be subject to hysterical fits before her marriage, and has occasionally had slight attacks of rheumatism, but has never been laid up with any illness, except just after she came to London, when she caught cold at the time the menses were present; these were suppressed, and she was dangerously ill for three weeks, during the greater part of which time she was insensible.

Soon after this illness she was married; and two years after, or about four years ago, she was confined, and had an easy labour. Eighteen months ago she aborted at about the second or third month of pregnancy; this was attended with very little discharge of blood. She knows no cause for this; her husband was often tipsy, and used then to strike and kick her, but she does not remember having been kicked for some days before the abortion occurred. Six months since she again aborted, at about the same period of gestation. This time she attributed it to her having over-exerted herself at mangling the day before; for on this day she observed a slight discharge of blood per vaginam, and had pains in the back and loins, and on the following day the abortion took place, and was accompanied with copious flooding, which continued at intervals in considerable quantities for two days, and gradually ceased on the third day. She had no medical attendance during either abor-

tion, as her husband said there was nothing the matter with her, and he obliged her to resume her work before the discharge of blood had ceased, and when she was so weak that she could scarcely stand or move. From the time of the second abortion, she has always been subject to discharges of blood every fourteen or sixteen days, and it generally lasts seven or eight days, being copious at first, and gradually diminishing in quantity till it ceases. The discharge is usually fluid, but sometimes there are clots of blood; these have, of course, reduced her strength very much, but she says she has not lost flesh until very lately; indeed, she rather got fatter. In addition to these she has ever since the second abortion, and indeed to a slight amount ever since the first, had an almost constant discharge of a dirty greenish-coloured, thick fluid, like matter, she says, and of a very foetid odour, and has been subject to pains in the loins, and occasionally in the hips. Sometimes, also, she has very severe dragging pains in the lower part of the hypogastrium, and often bearing down pains in the loins; and whenever this is the case, she feels something descending in the vagina, which feels about the size of an egg, and at these times she has considerable difficulty and slight scalding in passing her water.

Her employment used to be washing, or any kind of work, but for the last four months she has been employed as a monthly nurse, and has had much exertion and sitting up at night. She continued at this employment until the 24th instant, gradually getting worse; her appetite began to fail; she had pain in the back of the head, giddiness, thirst, and feverishness, and was much exposed to cold and damp, and sometimes to great heat in cooking.

On the 24th instant the present attack commenced with a copious discharge of blood per vaginam, lasting an hour and a half, and not ceasing entirely until the following evening; it soon returned, and continued at intervals till the 28th. She was attended by two medical men, who gave her medicine; but as she did not improve much, she came to the hospital to-day (29th), with the following symptoms. The skin is hot and dry, the face much flushed, and has an anxious expression; the eyes suffused, and surrounded by a dark circle; has no headache, but feels drowsy, and complains of swimming in the head, with great weakness and faintness. She speaks in a very low tone of voice; the tongue is covered with a white fur, and she is very thirsty. She complains chiefly of a sharp stabbing pain in the lower part of the abdomen, and great tenderness on pressure. The pain is easiest when she is lying on her back, and is in-

creased by sitting up or lying on either side. The pulse is 80, and rather full; bowels open; urine high-coloured, and deposits a cloudy sediment on standing.

Admoveantur Hirudines, No. x. parti dolenti Abdominis.

R Hyd. Chlorid. gr. iij. fiat pilula, 6tū quāque horā sumendā.

R Acidi Tartarici, gr. x.; Sodæ Sesquicarb. gr. xiv. sumat cum Aquā fontanæ p. r. n. et cum singulis pilularum dosibus. Low diet.

April 30th.—Sleep much disturbed with sudden starting, and dread of falling from a height; skin still hot, but moist; the pain and tenderness still continue in the lower part of the abdomen, especially in the left iliac region; there is no spinal tenderness. The discharge of blood has returned, but not to a great amount, and the other discharge continues, and the faint disagreeable odour of it is very perceptible. If she sits up she feels the bearing down in the vagina before mentioned; the bowels have been opened twice.

May 1st.—Much the same as yesterday; the discharge of blood has ceased again, and the bowels are purged a good deal. Dr. Taylor made an examination per vaginam, and found that the cervix uteri was elongated and indurated; the os uteri was expanded so as to admit the point of the finger; the lips of it were thickened, and the patient stated that it felt tender when touched. No enlargement of the body of the uterus was perceived, and it cannot be felt above the margin of the pubes.

Admoveantur Hirud. xii. abdomini, et postea Cataplasma Lini.

R Misturæ Cretæ, f3viij.; Pulv. Kino, ʒij. M. ft. mist. Sumat cochl. ij. magna post singulas sedes liquidas.

2d.—The skin remains above the natural temperature, but is soft and moist; the giddiness is gone; the gums are swollen, red and tender, and the breath has a mercurial fetor; the purging is less; the tenderness of the abdomen is much diminished, but is not removed; there is no enlargement or increased tension of the abdomen. The respiratory sounds are not morbid, and the heart's impulse is natural; the first sound of the heart is not quite natural, but there is no murmur.

Capiatur pilula Calomel. ter die.

4th.—The patient is much easier; the skin natural; there is no pain in the abdomen except when firm pressure is made; the bowels regular.

Omittantur pilulæ.

6th.—Better, but does not sleep at night; the mouth is sore, and there is some saliva-

tion; the tongue swelled, indented at the margin, and coated with a yellowish fur; the pulse 96, moderately full, not hard; the pain in the abdomen, even on firm pressure, is very slight; has a little pain in the back, and feels a bearing down of the uterus if she sits up. The leucorrhœal discharge is gradually diminishing, is of a white colour, and almost inodorous; the bowels rather costive.

R Olei Ricini, f3ss. statim.

Ordered a pint of milk in addition to low diet.

9th.—She looks much better; the face is not at all flushed, and the expression natural; feels quite comfortable, and much stronger; has no pain; the appetite improving; bowels regular; the urine is plentiful; has an acid reaction; contains a sediment of the lithates; is not albuminous. Was permitted to sit up a little.

R Potassii Iodidi, gr. iv.; Aquæ Menthæ, f3iss. ft. haust. ter die sumendus.

12th.—Continues to improve in strength and appearance; appetite good. The discharge has been gradually diminishing, and ceased entirely yesterday.

Ordered an additional pint of milk daily.

15th.—Still gaining strength; is now dressed and sitting up, and does not feel any pain anywhere, nor any bearing down, except perhaps for a minute or two when she first gets up; pulse 84, natural; bowels regular; urine much increased in quantity since she has been taking the iodide of potassium; the discharge returned again slightly yesterday. Dr. Taylor examined her again to-day per vaginam; he found that the neck of the uterus was still elongated and indurated, but it and the orifice were both much less tender to the touch.

16th.—At her own request she was discharged to-day, though she was advised to remain longer.

REMARKS.—In this case there were two diseases closely connected with one another, almost as closely, indeed, as cause and effect, for if there had been no disease of the uterus, there would probably have been no peritonitis. We shall commence with a few remarks on the peritonitis, as it was that which demanded relief most urgently when the patient was admitted into the hospital.

The *diagnosis* of peritonitis was pretty clear; there was acute pain of the abdomen, increased by external pressure, or by anything which would cause the organs to press one against another, as sitting upright or lying on one side, and least in that position in which the muscles of the abdomen were most completely at rest, viz. when the patient was lying on her back with the legs drawn up. The pain was not that of hyste-

ria, it was of a different character, sharp and stabbing, also deeper seated, and there were no symptoms of hysteria, no tenderness of the spine, &c. Besides, there was considerable symptomatic fever; a hot and dry skin; a flushed anxious countenance; giddiness; suffusion of the eyes; thirst; sleeplessness, or if sleep was procured, it was disturbed by frightful dreams; high-coloured urine, &c. It may be said, perhaps, that all these symptoms were caused by inflammation of the uterus; but the pain was not limited to any particular locality of the abdomen, as it would probably have been in that case, but was pretty general over the abdomen, though most severe in the lower part, as it commonly is in peritonitis. We conclude, therefore, that there was peritonitis, but that it was not very severe, for there was not that extreme tenderness that sometimes exists, and there was no enlargement or tympanitis of the abdomen.

The *treatment* adopted was such as is indicated in a mild attack of peritonitis where the patient is in a weak condition as here, viz. local depletion, by leeches, followed by calomel, given so as to affect the system; cooling salines, and antiphlogistic regimen, &c. In two days, as the local pain and tenderness were not very much diminished, leeches were again applied, and ordered to be followed by a large cataplasm which often seems to act very beneficially in such cases, partly, perhaps, by increasing the bleeding from the leech-bites; partly by soothing the parts, keeping them moist, and determining to the surface; and possibly the equable pressure may assist in producing the good effects. She was also ordered an astringent mixture to arrest the purging which had come on, and which would tend to prevent the mercury from being taken into the system. After the second depletion we find that the violence of the symptoms soon disappeared: the pain and tenderness were much reduced; and also the symptomatic fever, and the gums at this time became tender, indicating the action of the mercury on the system; and this no doubt helped very materially to carry off the inflammatory condition of the system.

Subsequently little additional treatment was needed, except the due regulation of the secretions. All the symptoms of peritonitis gradually subsided, leaving the patient in a weak state, and still having disease of the uterus. Iodide of potassium was given to remove any remains of the inflammation, and its administration was attended with the same results as it produces in other cases of inflammation, especially rheumatic, when given after the severity of the disease has been got under by more powerful remedies; these results were a gradual improvement in

the appetite, appearance, and strength of the patient, and also an increased secretion of urine.

We shall next advert to the *symptoms referrible to the uterus*; these were numerous and may be divided into the rational and physical. The chief *rational symptoms* were pains in the loins, sometimes in the hips, and occasionally also a severe dragging pain in the lower part of the hypogastrium, and a sense of prolapsion of the uterus, and then difficulty and slight scalding in passing the urine;—besides these, there was profuse menorrhagia, of six month's standing, occurring about every fortnight, and lasting each time a week or more; and when free from the menorrhagia there was a discharge of a foetid, dirty, greenish, thick fluid, which had existed for eighteen months. As a consequence of these, there was a considerable reduction of strength. The *physical signs*, which were ascertained by a manual examination (the speculum was not used in this case), were that the neck of the uterus was elongated and indurated, and more accessible to the examining finger, and probably the whole uterus was too low down, the os uteri was patulous, and the lips thickened and tender to the touch.

Before we can establish the *diagnosis* of the disease on which these symptoms and signs depended, we must examine the previous history of the patient. In this we find she had aborted twice, and on both occasions it took place about the same period of pregnancy—and here the question at once arises, was there any disease of the uterus at the time of the first abortion to produce it, or did the abortions act as predisposing causes to the disease of the uterus? The latter is probably the correct opinion, for there is no mention of any symptoms of disease of the uterus previous to the first abortion, and the probability is that none existed, as she had gone to the full period of gestation before, and given birth to a living child, without any unusual difficulty; but very soon after the first abortion there was a leucorrhœal discharge, and after the second abortion there was menorrhagia in addition; and these are two of the symptoms before enumerated. Admitting, then, that the abortions were at least predisposing causes of the disease of the uterus, what caused the abortions? The answer to this question is apparent from the history. On the first occasion the blows and kicks on the abdomen, which she admits having received from her husband, and the mental excitement which we should imagine consequent to such mal-treatment, were sufficient causes; and the predisposition left by this to the recurrence of it, together with a good deal of extra exertion at mangling, about the same

period of pregnancy, abundantly account for the second abortion.

Reverting again to the history, we find that immediately after the occurrence of the second abortion, before the discharge of blood had ceased, she was compelled by her brutal husband to get up and resume her usual employment, and from this time she has never been free from a discharge of some kind or other from the vagina, and the other symptoms before mentioned have been more or less constant. We conclude, then, that the abortions acted as predisposing causes of disease in the uterus, and that the immediate exciting cause was the neglect of all medical aid during the abortions, and the too early resumption of the standing posture and employment afterwards—a period at which the uterine vessels are of course much congested, and the whole uterine system unusually active; and when, therefore, if the vessels are still more filled, as they are in the erect posture, and excited by exertion, the congestion will be exceedingly liable to be converted into inflammation. If inflammation arise, one essential element of it is exudation of lymph or serum; and in parenchymatous organs, as the uterus, the exudation is interstitial, producing thickening, and, unless reabsorbed, also induration of the inflamed part. The increased weight thus produced would account for the prolapsus, the dragging pains, &c. complained of. Inflammation would also cause the tenderness on pressure of the os uteri, the leucorrhœal discharge, and the hæmorrhage. We know that hæmorrhage is by no means an unfrequent accompaniment of inflammation in other parts, as the intestines, &c. but it is especially common in metritis.

But most if not all of the above symptoms might have been caused either by metritis, or by the early stage of carcinoma; how, then, are we to distinguish on which of the two they are dependent. There are several reasons against the carcinomatous nature of the disease, and there are some in favour of its inflammatory nature. 1st. *Those opposed to its carcinomatous nature* are, (a) the age of the patient, which is much younger than that at which cancer usually shows itself; (b) the complexion had not the peculiar characteristic sallowness of the cancerous diathesis; we say diathesis, because we believe that cancer is just as much a constitutional disease as scrofula; (c) she had not any hereditary predisposition to cancer, as far as could be ascertained; (d) it is not probable that there would have been such a copious, thick, foetid discharge in cancer, unless it were advanced to open ulceration, and touch afforded no evidence of this; (e) the enlargement of the cervix uteri was not partial and uneven, as commonly happens in cancer, but uniform; (f) the absence of the marks of

cancer in other parts. 2d. *The reasons in favour of the inflammatory nature of the disease* are, (a) the circumstances under which it (apparently) commenced, which are just those which would be likely to excite common inflammation in those parts, viz. undue excitement or irritation, superadded to great congestion; and though these might have acted as exciting causes of cancer, had a predisposition to it existed, yet in the absence of this it is most likely that common inflammation would be produced; (b) the age, also, was that at which inflammation is most apt to arise; (c) we may, perhaps, add the extension of the inflammation to the peritoneum; and lastly, (d) the effect of the treatment, which was much more successful than it would probably have been in cancer.

Assuming, then, that the disease was metritis, we can readily imagine that it would be greatly increased by much exertion, standing, &c.; and if we remember the close connection between the uterus and the peritoneum, we shall be at no loss to comprehend how the aggravated inflammation of the uterus should be propagated to the peritoneum, as it probably was in this case.

We have now noticed the two diseases separately; the mode of connection between the two; their causes and diagnosis, and the treatment of the peritonitis; and it only remains to add a few words on the treatment of the metritis, and the prognosis.

The *treatment* that was adopted for the cure of the peritonitis, was well adapted also for the relief of the metritis, viz. calomel given so as to affect the system; local depletion, &c.; and especially the horizontal posture, and absolute rest, which form an essential part in the treatment of metritis, serving to prevent the accumulation of the blood in the uterus from gravitation, and also preventing the operation of one of the most common exciting causes of inflammation, viz. exercise. Under this treatment she got rid of nearly all the general symptoms referrible to the uterus. Thus the menorrhagia had ceased; the leucorrhœal discharge had ceased entirely until she began to sit up again, and then it only returned to a very slight extent, and was of a very different character; all the pains were gone; the prolapsus of the uterus was scarcely felt even when she got up, and she was gaining strength. The physical signs also were improved; the tenderness had ceased. Still, however, the enlargement and induration of the cervix uteri remained. Such was her condition when she left the hospital at her own request. If she had remained, Dr. Taylor intended to have used more strictly local bleeding, as leeches or scarification of the os uteri; and had the rest been persevered in, and this measure adopted, a very

favourable *prognosis* might have been given, judging from the considerable improvement already made in her health, her age, and naturally good constitution; but as she was forced to return to her employment as monthly nurse, we fear that she will be very liable to aggravations of the metritis on any unusual exertion, and it is not at all improbable that the peritonitis also may recur, and from the continuance of the cause it may prove severe.*

CLINICAL NOTES,

By J. ADAIR LAWRIE, M.D.

Professor of Surgery, Anderson's University,
Glasgow.

II.—On some of the more common forms of aneurism.

I HAVE carefully examined all the records of the Glasgow Infirmary, including the printed annual reports and the manuscript journals, and I find that from the opening of the hospital in 1794, to 1st Jan. 1842, a period of 46 years, there have been 23 operations "of aneurism from disease," being one operation in two years. When we consider the amount of population in and around Glasgow, we must conclude that aneurism of the extremities admitting of operation is a rare disease in this neighbourhood. The operation does not seem to keep pace proportionally with the population, and the number of patients admitted into the Infirmary for other diseases. The number of operations has not been, on an average, two in three years during the last ten years, while the number of patients admitted has increased nearly fourfold. Of these 23 cases, I have been able to procure more or less accurate details of 17; from which the annexed table is constructed, and from which the following particulars are given.

1. *Sex*.—Of the 17, 13 were males, and 4 females, being in the proportion of $4\frac{1}{2}$ to 1; giving a large proportion of females. Dr. Hodgson makes the proportion one in thirty-four. Dr. Hope says that, in external aneurisms, it has not exceeded in his experience "one in fifteen to twenty."

2. *Age*.—Excluding the two congenital cases, the ages range from 18 the youngest, to 65 the oldest. There is one under 20; two between 20 and 29; eight between 29 and 40; three between 39 and 50; one above 60. These ages are younger than is generally supposed; the explanation is to be found in the causes of the disease, or at least of the cases which form the table.

3. *Causes*.—Of the 15 cases not congenital, eight were attributed to violence, either in the form of blows on the artery, as in cases 5 and 13, or from exertion or sprains: this combined with the ages and sex would shew that external aneurisms are likely to be most frequently met with in those in the prime of life, whose occupations are fatiguing and laborious, and not in those whose arteries are diseased by age.

4. *Vessels affected*.—Of the 17 cases, 3 occurred in the vessels of the head, neck, and upper extremities, (viz. 1 temporal; 1 subclavian; 1 brachial and vessels of fore-arm). 14 in those of the lower extremity; viz. 1 profunda femoris; 2 femoral, and 11 popliteal; shewing a great disproportion between disease of the vessels of the upper part of the body requiring, or admitting of operation, and those of the lower. Of the lower vessels the popliteal is by much the most frequent cause of operation. This is doubtless attributable to the position of this artery relatively to the knee-joint. Something may also be owing to its being imbedded in cellular tissue, at some depth under the fascia, and but loosely supported by the muscles. Of 10 of the popliteal aneurisms in which the limb is stated, 7 were in the left, and 3 in the right. This may have been accidental; but so far as it goes it may appear an objection to the opinion, that the cause of these aneurisms is rather to be sought for in the effect of violence than in disease in the vessels, inasmuch as the right knee is fully as much exposed to injury and over-exertion as the left. It may however admit of explanation, in what I believe to be very frequently the case, that the ligaments of the left knee are more lax than those of the right, allowing the joint to be thrown unduly backwards, and thereby causing a greater strain on the parts placed posterior to it.

5. *Mortality*.—Of the 17 cases, 4 were fatal; being deaths to recoveries as 1 to $4\frac{1}{2}$; of these 17, the results of two are uncertain, and in one the operation failed, the patient's life having been saved by amputation; consequently in 5 cases out of 15 the operation failed, the proportion being as 1 to 3—a much greater mortality than I expected. The causes of death were, 1st, serous effusion into the cerebral cavities, in the case of ligature of the subclavian (No. 2). This was doubtless owing to the increased quantity of blood transmitted along the carotids, and suggests in cases of this kind, especially when the patient is advanced in years, the propriety of venesection before and after the operation; shaving the head, keeping it high and cold, and using those means which experience has shewn to be best adapted for lessening the quantity of blood in circulation through the brain. 2d. Case 4, ligature of

* ERRATUM.—Page 565, col. 1, eighth line from bottom, omit the brackets enclosing the words "the fifth and ninth nerves."

TABLE OF CASES OF ANEURISM TREATED BY OPERATION IN THE GLASGOW ROYAL INFIRMARY.

I.—ANEURISM FROM DISEASE.

No.	Sex.	Age.	Occupation.	Cause.	Vessel diseased.	Vessel tied.	Result.	Remarks—Cause of Death, &c.
1	Female	23	—	Congenital	Cirroid aneurism of temporal	Common carotid	Cured	
2	Male	65	Weaver	Unknown	Subclavian	Subclavian, close to scalenus.	Died	Died comatose 68 hours after operation; serous cerebral effusion.
3	Ditto.	21	Bleacher	Congenital	Axillary, cirroid aneurism	Brachial and ulnar.	Cured	
4	Female	18	—	—	Profunda femoris	External iliac	Died	Inflammation of cellular tissue in iliac region; peritonitis.
5	Male	30	Flesher	Kick from ox	Femoral	Femoral, near Poupert's ligament.	Cured	
6	Ditto.	45	Weaver	—	Left femoral	Femoral; two ligatures; vessel cut between them.	Not stated	Disease of five months' duration.
7	Ditto.	30	Blacksmith	Sprain	Left popliteal	Ditto. Ditto.	Cured	Femoral of right side tied seven months previously.
8	Ditto.	31	Soldier	Fatigue in marching	Right popliteal	Femoral. Amputation	Cured	Gangrene; amputation; ten months' continuance.
9	Ditto.	30	Sailor	Sprain	Right popliteal	Ditto.	Died	Gangrene; hæmorrhage from wound of operation; amputation; died in three hours.
10	Ditto.	30	Labourer	Unknown	Popliteal	Femoral	Cured	Ligature came away on ninth day.
11	Female	22	—	Uncertain	Left popliteal	Femoral. Two ligatures	—	Five months' duration.
12	Male	36	Weaver	Fatigue in walking	Left popliteal	Femoral. Amputation	Died	Gangrene on 9th day; amputation on 34th day; died 6th day after amputation; ligature came off on 23d day.
13	Ditto.	42	Farm servant	Kick in ham	Left popliteal	Femoral	Cured	On 19th day, hæmorrhage from wound of operation arrested by pressure; ligature came off on 36th day.
14	Ditto.	42	Sailor	Unknown	Left popliteal	Femoral	Cured	Ligature came away on 12th day.
15	Female	25	—	Fatigue	Left popliteal	Femoral	Cured	" " " 16th day.
16	Male	32	Street porter	Fall	Left popliteal	Femoral	Cured	" " " 15th day.
17	Ditto.	31	Flesher	Fall	Right popliteal	Femoral	Cured	" " " 16th day.

the external iliae, died of inflammation of the tissues in the neighbourhood of the wound of the operation. 3d. Gangrene occurred in three cases (8, 9, 12) of ligature of the femoral for aneurism of the popliteal. In all amputation was performed, two died and one recovered. It may be worth while to consider these cases a little more in detail.

CASE I.—*Popliteal aneurism.—Ligature of femoral.—Gangrene.—Amputation.—Cure.*

George Miller, æt. 31, soldier, admitted July 11th. In right ham extending to both sides of knee, and upwards along thigh, is a pulsatory tumor. It can be nearly emptied by steady pressure; was first observed 11 months ago, after fatiguing marches; pain disturbs sleep; right tibials do not pulsate at ankle; veins full; temperature of right foot 92° , of left 85° .

July 13th.—Femoral tied at lower part of upper third of thigh with one ligature; numbness and pain in foot almost immediately after operation. The mean of six trials with the thermometer in 12 hours gave $89\frac{3}{4}^{\circ}$ for the right foot, and $92\frac{1}{2}^{\circ}$ for the left.

14th.—Mean temperature of right foot $83\frac{1}{2}^{\circ}$, of left $91\frac{1}{2}^{\circ}$.

15th.—Foot discoloured; mean temperature of right foot assisted by warm applications $87\frac{3}{4}^{\circ}$, of left $95\frac{3}{4}^{\circ}$.

16th.—External heat causes intolerable pain; temperature at one time as low as 76° ; careful and frequently repeated friction was now used with relief to the pain, and increase of temperature.

20th.—Gangrene extends.

26th.—Gangrene has reached the knee-joint, and seems to have ceased at the commencement of the thigh.

August 31st.—Line of demarcation having distinctly formed dead parts beginning to separate, thigh being sound, and health pretty good, amputation was performed about the middle of both thighs.

October 25th.—The stump healed, and he was dismissed cured.

CASE II.—John Lyle, æt. 30, sailor, September. Has a large pulsating swelling in right ham, caused by a violent exertion in vaulting over a boat. The vessel was tied in the ordinary way and place; the ligature came away on the 10th day. The limb died. Hæmorrhage took place from the wound of the operation, and the blood was ascertained to have come from the side of the vessel immediately above the ligature. Amputation was performed on the 22d day; death followed in three hours. The vessel in the ham was found fairly torn across, and the severed ends separated half an inch.

In both of these cases the tumor was large and somewhat diffused. In the first the absence of pulsation in the tibials, and the dis-

tended state of the veins, shewed a very embarrassed circulation. In the second the disease belonged more to the traumatic form, the vessel having been fairly torn across. These circumstances, so far as two cases go, would appear to promise unfavourably for operation.

The 3d Case (No. 13) is related in Dr. M'Farlane's reports (p. 9). The patient seemed going on favourably until the limb was seized with erysipelas, which proved too much for the weakened circulation. Gangrene came on on the 9th day. On the 31st day amputation was performed; in five weeks afterwards he died.

I shall say a few words on secondary hæmorrhage, when I give the details of some of the traumatic cases.

The following successful cases may perhaps be worth giving in details.

CASE IV.—Mrs. Duncan, æt. 23, admitted September 11th, 1839, for an ulcer on the left ankle. Soon after admission, a swelling was discovered on the back part of the limb, of which the following report is given in the journals.

"There is a considerable swelling of the upper and back part of the left leg, occupying principally the lower popliteal space, and lying more towards its outer than inner side. It pulsates throughout, and communicates a harsh *bruit* to the stethoscope; pressure on the femoral artery arrests the pulsation in the tumor, and pressure on the tumor itself diminishes its size considerably. It is the seat of constant pain aggravated during night. Began five months ago, without any obvious cause, except (she thinks) straining the knee in halting on account of the ulcer on the ankle.

September 16th.—A consultation were of opinion that the disease was popliteal aneurism, and recommended that the femoral artery should be tied. They advised a few day's delay in consequence of the *bruit* having ceased, with increased pain in the swelling, and a stitch under right mamma.

Mitt. Sanguin. ζ xij. Tumori adhibeat; Lotio frigida; abstineat a motu.

22d.—Condition of limb having very much improved, and *bruit* having returned to the swelling, the femoral artery was tied to-day at junction of upper with middle third of thigh. On account of the depth of the artery, which lay fully an inch from the surface, covered by fat, the external incision was made fully four inches long, which allowed the operation to be concluded with great facility; slight venous bleeding; she screamed and struggled most violently; both ends of the ligature were left, and the wound dressed with adhesive plaster. At present (one hour after operation) pulsation and pain are gone from tumor; temperature of the limb good.

Circumdetur erus indusio lanco.

The only circumstances worthy of notice in the progress of the case were severe cramps in the limb, and diarrhoea soon after the operation, which yielded to opium; the temperature of the limb, with the exception of the toes, which were cool, but never cold, was fully equal to that of opposite. The tumor gradually diminished, but did not disappear; pulsation was never felt in it. The ligature dropped off on the 15th day, and the wound healed readily. The day after the operation the ulcer on the ankle is reported as "discharging fully more pus than before the operation, and of a perfectly healthy character." Four days after the operation, this ulcer was inflamed and livid, and the discharge bloody; it soon afterwards improved, and in three weeks had quite cicatrized.

October 25th.—Dismissed cured.

On the 30th she returned complaining of pain in the leg and foot, in the course of the anterior tibial vessels and nerves, for which she was cupped and leeched, and took carbonate of iron and rhubarb.

November 18th.—Dismissed cured.

CASE V.—*Politeal aneurism—Operation—Cure.*

John Ballantine, æt. 22, porter, Bridgegate, married, admitted March 27, 1840. Filling the left popliteal space there is a large pulsating tumor, firm, with well-defined margins, somewhat pointed towards its centre, but its surface not discoloured. It can be slightly lessened by pressure, and completely deprived of pulsation by compressing femoral artery. It is the seat of considerable pain extending over leg. On applying the stethoscope a very loud bellows murmur is heard; and the same sound, though very feeble, is perceived over the course of the femoral artery. Sounds of the heart and large vessels healthy.

The swelling was first observed two years ago, after a fall down a flight of steps, when his left leg being bent under him sustained the entire weight of his body. This injury was followed by swelling and discoloration of the whole leg, and very soon afterwards a small pulsating swelling shewed itself in the ham. General health good; addicted to drinking.

April 2d.—Yesterday, by advice of a consultation, the femoral artery was tied about the junction of the upper with the middle third of the thigh. The vessel was superficial, and easily exposed. A little difficulty was experienced in passing the needle round the artery, and immediately before tightening the ligature the wound filled with venous blood. Not more than two ounces of blood were lost, and the bleeding ceased without any pressure. Wound dressed with two stitches and adhesive plaster; temperature of limb good; toes perhaps a little

cold; superficial veins full; pulse 84; a good night from 40 drops of solution of morphia; pulsation has not returned to tumor, which is firmer and smaller.

6th and 7th.—Slight pain and redness from knee to lower angle of wound removed by leeches.

15th.—Ligature came away to-day, the 15th from the operation; wound nearly healed; tumor very much diminished; health perfectly good.

24th.—He left his bed, walked too soon, and brought back the pain and swelling in the lower and inner part of the thigh. He had also a slight attack of pneumonia on the left side; for which free local depletion was used, and he was brought under the influence of calomel. The symptoms gradually subsided, and on May 19th he was dismissed cured.

REMARKS.—My impression was, at the time of the operation, that I had wounded the femoral vein in passing the needle between it and the artery. The small amount of hæmorrhage and its spontaneous cessation would rather favour the idea of its being a branch. Be that as it may, it adds another to the cases which shew the necessity of using no force, and being in no hurry in getting the ligature round the artery. No immediate bad consequences followed, and I attributed the inflammatory symptoms which came on 24 days after the operation to imprudence, and not to the injury done to the vein or its branches during the operation.

[To be continued.]

COMPARATIVE FREQUENCY OF PHTHISIS IN MAN AND IN ANIMALS.

M. RAYER lately read a very elaborate and interesting paper, at the Academy of Sciences, entitled, "Fragment of a comparative Study of Phthisis Pulmonalis in Man and in Animals." The following are his conclusions:

1. Tuberculous phthisis is of all chronic diseases the most common both among men and animals.

2. In man and other mammiferous animals, tuberculous matter may be readily distinguished from fresh pus, which always contains granular globules. In birds, the characters of tuberculous matter are less decidedly marked: the artificial introduction of foreign bodies into the lungs and muscles produces, not a white, opaque secretion, with granular globules, but a dry, yellowish substance, having no globules. The physical characters of which approach those of tubercles in the mammalia. In reptiles, fishes, and insects, the characters of tubercles are still less distinct.

3. Pus, in the mammalia, particularly in the horse, when deposited for a long period

in the organs, undergoes successive transformations, which sometimes give it the appearance of tuberculous matter.

4. Pulmonary tubercles in man and quadrupeds, having a gray tint. In the lungs of the cow, tuberculous matter has usually a yellow chamois-leather colour.

5. In man and animals, the central softening of tubercles cannot be attributed to inflammation. It never presents globules of pus. The peripheric softening of tubercles is, on the contrary, most commonly promoted by inflammation of the surrounding tissues. It is almost always mixed with globules of pus.

6. The yellowish matter, which is found in the hydatid cysts of ruminating animals after their rupture, has some analogy with the matter from the lungs; but the cysts, filled with this yellow matter contain almost always the remains of the hydatid sacs, and sometimes a certain amount of pus.

7. The cretaceous or calcareous concretions, composed chiefly of carbonate and phosphate of lime, which are seen in the lungs of men and animals, should not be considered, as has been heretofore the case, as nearly always a final modification of tubercle; they are often in man, and very often in the horse, the remains of a small deposit of pus.

8. In many animals, there are formed in the lungs verminous granulations and glandular granulations, which should be distinguished from tuberculous granulations.

9. In quadrupeds and in certain birds transported to temperate from warm climates, the development of phthisis has its maximum of frequency, almost to the exclusion of other chronic diseases. It is likewise promoted by a change of climate, and of alimentation in other animals coming from the North, and particularly in the rein-deer.

10. Phthisis, which is rare in solipeds domesticated, is still more so in the carnivorous animals. Nevertheless, in spite of the prophylactic influence of a strong constitution and animal diet, many carnivorous animals, the domesticated cat, and, especially, the lion, and tiger, when transported into a temperate climate, may be attacked with pulmonary phthisis. This same infrequency of phthisis is found among birds, in birds of prey.

11. It is found that, of carnivorous animals, the domesticated dog, of solipeds, the horse, are much less subject to tubercles than to cancer, a disease considered by Camper as unknown among animals.

12. In ruminating animals, particularly in the bovine tribe, phthisis is often found together with vesicular worms, particularly the echinocochia; but there is no foundation for the opinion that there is any connection of transformation or succession between these hydatids and tubercles.

13. The fatty degeneration of the liver is generally a sign of phthisis in man and of general obesity in birds.

14. The alterations of the bones, which are observed in tuberculous monkeys, and particularly in those of America, appear analogous to the enlargement and spongy softening of the bones in phthisical and scrofulous children. Similar alterations are noticed in the bones of the carnivora of warm countries, transported into temperate latitudes.

15. While the frequency of pneumonia, and the infrequency of phthisis, in the domestic dog, appear to indicate a want of connection between these two diseases, it is otherwise with the calf, the cow, and the milch ass, in which the deposit of tuberculous matter almost always coincides with a chronic progressive pneumonia.

16. Phthisis is hereditary, but it is almost never congenital, even in the incipient stage.

17. In phthisical subjects, the sperm contained in the vesiculæ seminales has few or no spermatic animalcules.

18. Ulcers of the larynx, trachea, and bronchiæ, are not of the same import in man and in all animals. In the former, they almost always denote pulmonary phthisis, and sometimes syphilis; in quadrupeds, a general tuberculous affection; in solipeds, almost always the glanders.

19. In pneumothorax, vegetations may be formed upon the pleura of a phthisical patient, as occurs sometimes in the air-cells of birds which are tuberculous, or labouring under a lesion of the organs of respiration. In this case, as in all those noticed in the vertebrata, the development of this species of vegetation is always a secondary phenomenon.

From the foregoing conclusions, M. Rayer developed some general reflections, to which he called the attention of the Academy.

The progressive connection which anatomy and physiology demonstrate in the animal series, is shown also by pathology. It is owing to a parallelism of organization that phthisis runs through so large a number of the vertebrata, until, as the scale of organization is lowered, the distinguishing characters of tubercles disappear, and are not appreciable by our present means of investigation.

A predisposing cause in the production of tubercles in animals, is captivity or domestication; and, more comprehensively, a decided and prolonged change in the natural state of existence. The rein-deer coming from the North, the monkey from the South, both meet with the same end, when brought into captivity, although starting from opposite points. This cause, in intensity of action, may be compared to the bad lodging and nourishment, which, in man, so fearfully develop tuberculous phthisis. — *Archives Générales de Médecine*, August, 1842.

USE OF THE SPLEEN.

To the Editor of the Medical Gazette.

SIR,

As Mr. Jackson, in your last number, has made one or two remarks on my objections to the spleen being the propeller of the blood through the liver, I am of course expected to answer: but really there is nothing to reply to; and as it is only now a matter of argument for the sake of argument, I shall condense my observations into the shortest space. His statements in the last number are perfectly ridiculous; and as from the tenour of his pledge in the postscript, "that he will reply to all I can say," &c., I here finish the matter. I never mentioned the penis, nor the cause of its erection. "What muscles, in the case of the spleen, cause its erection, as they are analogous?" Does not fear cause muscular relaxation? Is not that the cause of the contraction of the penis? If not, Müller is wrong, amongst many others. Is the hand composed of veins only? Is not the contraction of the veins of the hand, dipped in cold water, produced by the vital contraction of the surrounding tissue? Mr. Jackson now says, "It is by this vital contraction of the trunk and branches of the spleno-hepatic vein that the portal blood is propelled through the portal plexus and hepatic veins, and after the spleen has been excised." *Ergo*, it is by "something else," not the spleen, that the blood is propelled! This exactly agrees with my previous statements. And I must conclude by saying, that it is not my intention to prove or disprove anything more than the question I stated, which I have satisfactorily done; or, in other words, Mr. J. has done for me. I will shortly withdraw Mr. J.'s last arrow by proving that the ratio he has brought forward concerning the relative weights of the spleen in man and animals must be reversed. But for the present, "Why is the liver universally present in the animal kingdom, and the spleen only so in the vertebrate animals?" This is all I shall advance in form of a reply, as I am anxious to see your pages filled with more profitable matter than any such discussion would be. Moreover, any one that has read the last letter of Mr. Jackson must notice his peculiar manner of evading the primary question, and going on to discuss the physiology of the penis; so that I firmly believe by further notice the discussion would be extended throughout the whole province of physiology. My only excuse for ever having noticed it at all is, that others have made replies to the statements advanced to prove the spleen to be as represented by Mr. Jackson, and he has proved them wrong;" *i. e.* written a "large quantity" of matter, evading the primary question, which has

apparently satisfied them. In conclusion, I may finally remark, that "the spleen is not, nor cannot be, the propeller of the blood through the liver, because the blood continues to be circulated through that organ after the spleen is removed." This I consider enough to satisfy any one but those who *will* not be satisfied.—I am, sir,

Your obedient servant,
A CONTRIBUTOR.

BRIGHT AND ADDISON'S PRACTICE OF MEDICINE.

To the Editor of the Medical Gazette.

SIR,

THREE years have elapsed since the first volume of Drs. Bright and Addison's "Practice of Medicine" was published, and there seems to be no prospect of the appearance of the second volume. In common with those who possess the first, I think it would be but just, to give notice if there is any intention to finish the work. A letter from Dr. Bright appeared in the *GAZETTE*, several months since, stating that he was about to publish *immediately*, a work on Disease of the Kidneys. This, perhaps, may be intended as a conclusion to the work before mentioned, as that will have to treat on the various kinds of dropsy, &c. Perhaps the profession may be informed when it will be forthcoming.

Another work which is yet unfinished, and of which the first part appeared a very long time ago, is Dr. Ashwell's "Treatise on Diseases of Women," published by Mr. Highley. Certes, these gentlemen of Guy's Hospital are rather dilatory in performing their promises.—I am, sir,

Your obedient servant,
MEDICUS.

HOMŒOPATHY.

To the Editor of the Medical Gazette.

SIR,

How characteristic is the lucubration of Harris Dunsford, M.D.: it is an homœopathic note containing an infinitesimal *contradiction of facts*. There is one error in my former letter to you on the subject of Lady D—. The post-mortem examination was made by a Mr. F.—, *accoucheur general* to Messrs. Dunsford and Co.

I pray you to open your *GAZETTE* to well-authenticated failures and mischief done by these homœopaths; and rely on it, you will have your desk loaded. The great gun amongst them has already sounded the alarm, and let fly a shot at the folly of Messrs. D. and Co. taking such responsible cases. What an *exalted* opinion he must have of this *noble science*!—Yours faithfully,

M. D.

MEDICAL SOCIETY OF BORDEAUX.

To the Editor of the Medical Gazette.

SIR,

I HAVE been requested to forward to you the accompanying "Programme" from the Medical Society of Bordeaux, who desire to make known their intention of awarding a gold medal, value 600 francs (£24), to the author of the best answer to the following question:—"What is the influence of the Penitentiary systems, and of solitary confinement in particular, on the health of prisoners, both in a physical and moral point of view?"

Papers to be written either in the Latin, French, Italian, English, or German language, and forwarded, post free, to the secretary, "M. Burguet, 67, Rue Fondaudé, Bordeaux," before the 15th June, 1843.—I am, sir,

Your obedient servant,
C. HOLLAND, M.D.

16, Queen Street, Mayfair,
Jan. 12, 1843.

MR. ADAMS' CASE OF DISLOCATION
AT THE KNEE-JOINT.

[SOME errors crept into our account of this case in a former number; we therefore subjoin a corrected edition.—ED. GAZ.]

Dissection of the Joint.

We examined the knee-joint immediately after the operation. As I had formerly supposed, the tendon of the *quadriceps* and the *ligamentum patellæ* were both entire, the latter, however, much stretched and slackened. The lateral ligaments, contrary to my expectation, proved not to be torn. Upon cutting into the joint, the crucial ligaments were found to be torn, but no other part there was injured. The posterior ligament, the heads of the gastrocnemius, and the popliteal vessels and nerves, were all safe.

METEOROLOGICAL JOURNAL.

Jan. 1843.	THERMOMETER.	BAROMETER.
Wednesday 18	from 34 to 48	30.22 to 30.35
Thursday 19	30 48	30.36 30.39
Friday 20	30 41	30.20 30.04
Saturday 21	31 35	29.93 29.94
Sunday 22	30 43	29.95 29.94
Monday 23	38 46	29.95 29.86
Tuesday 24	40 47	29.81 Stat.

Wind, S.W. on the 18th and 19th; E. by N. on 20th; E. by S. and S. on the 21st; S. by E. on the 22d; S. and S. by E. on the 23d; and S. on the 24th.

Except on the evening of the 18th, and for about an hour before noon of the 23d, generally overcast: a dense fog during the morning of the 19th.

Barometer.—The very low state of this instru-

ment noticed in the last number of the *MEDICAL GAZETTE*, appears to have been equalled in many places, and in some even a lower reading has been registered, viz. at the Observatory at Cambridge, about the same time, 1 h. 35 m. P.M. it was 28 inches, 13, and at Swaffham Balbeck, 25 m. later, the Barometer attained its minimum, 28 inches, 14. Some have asked if the Barometer has ever been observed to stand lower in this island near the level of the sea. I find in my own journal that on the 24th of December, 1821, at 10 h. 30 m. P.M. when the wind was blowing almost a hurricane from the S. S.W. the Barometer was 28.06, being 16 hundredths of an inch lower than we registered on the 13th instant. The Rev. J. Hailstone, in a paper contained in the first volume of the Cambridge Philosophical Society, mentions that his Barometer at Trumpington, was as low as 28 inches exactly; and several letters from various parts, both in this country and on the continent, appeared in the "Times" shortly afterwards, recording most disastrous gales: in one we read, that at Frankfort, the Barometer on the same night, Dec. 21, 1821, was 26 inches 6 lines.

CHARLES HENRY ADAMS.

ROYAL COLLEGE OF SURGEONS.

LIST OF GENTLEMEN ADMITTED MEMBERS.

Friday January 13, 1843.

H. H. Corbould.—F. D. Howell.—J. I. Atkinson.—R. E. Davies.—H. W. Hutchinson.—F. O. Barker.—H. W. Reynolds.—F. J. Burge.—T. F. M'Gauran.—R. E. Lutley.—R. Rudall.—A. Featherstonhaugh.

A TABLE OF MORTALITY FOR THE
METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, January 14, 1843.

Small Pox	17
Measles	35
Scarlatina	22
Whooping Cough	30
Croup	5
Thrush	3
Diarrhœa	2
Dysentery	1
Cholera	0
Influenza	0
Typhus	31
Erysipelas	6
Syphilis	1
Hydrophobia	0
Diseases of the Brain, Nerves, and Senses ..	175
Diseases of the Lungs and other Organs of Respiration	308
Diseases of the Heart and Blood-vessels ..	24
Diseases of the Stomach, Liver, and other Organs of Digestion	50
Diseases of the Kidneys, &c.	7
Childbed	4
Ovarian Dropsy	0
Disease of Uterus, &c.	5
Rheumatism	2
Diseases of Joints, &c.	4
Ulcer	0
Fistula	1
Diseases of Skin, &c.	1
Diseases of Uncertain Seat	112
Old Age or Natural Decay	79
Deaths by Violence, Privation, or Intemperance	25
Causes not specified	3
Deaths from all Causes	953

WILSON & OULBY, 57, Skinner Street, London.

THE
LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, FEBRUARY 3, 1843.

LECTURES

ILLUSTRATIVE OF SOME IMPORTANT CIRCUMSTANCES CONNECTED WITH
OPERATIVE SURGERY,

Delivered in the Theatre of St. George's Hospital,

By SIR BENJAMIN C. BRODIE, Bart. F.R.S.

Lecture 2.—December 14, 1842.

IN the preceding lecture, I explained to you some of the ill consequences of operation, which are met with either at the time of their being performed, or immediately afterwards. In the present lecture, I mean to draw your attention to some other sources of danger, the result of which are not rendered manifest until a later period.

The effect of any local injury depends, *first*, on the nature and extent of the injury itself; and *secondly*, on the condition of the individual at the time of the injury being inflicted. In one state of constitution, the slightest and simplest wound may produce ill consequences, which even the largest and more complicated wound would not produce in another; and it is the duty of the surgeon, before he has recourse to an operation, to study the causes of this difference, and to make himself acquainted with the circumstances on which its success or failure may depend. Evils which are anticipated may often be prevented, and at all events, it is always worth while to know what are the evils which may probably or possibly arise, in order that you may determine how far you are or are not justified in encountering them.

An operation may be followed by severe phlegmonous inflammation. You may remove a loose cartilage from the knee-joint, and in the course of forty-eight hours the synovial membrane of the joint may be distended with synovia, with great pain in the part, and symptomatic inflammatory fever;

or there may be a similar phlegmonous inflammation of the stump after amputation of the thigh, ending, if it be not checked by art, in suppuration and abscesses on the surface of the bone, destruction of the periosteum, and death of the bone itself to a greater or less extent. In such cases it may be necessary to have recourse to what is commonly called antiphlogistic treatment; to take blood from the arm, to give purgatives, and diaphoretics, and even to subject the patient to the influence of mercury. It is impossible to say, in all cases, whether it be or be not probable that symptoms of this kind will shew themselves, but you may, nevertheless, be justified in expecting them in many instances. A person of plethoric habit, of good constitution, who has been living rather freely, without actual intemperance, is the individual in whom such inflammatory symptoms most frequently appear. You may especially distrust a patient, whose urine is unusually loaded with lithic acid, whether it be a clear high-coloured secretion, depositing red or brown crystals of lithic acid, or whether it become turbid on cooling, having a red sediment, composed chiefly of the lithate of ammonia, and staining the bottom of the vessel which contains it, so that it resembles in appearance what they call a pink saucer. The secretion of the kidneys, where it habitually exhibits the appearance which I have just described, always indicates an inflammatory condition of the system. The individual thus affected is in a situation which may be compared to that of a man who has a sword suspended over his head by a thread which may break, so as to put his life in jeopardy at any moment. You must not be surprised, if he be suddenly, and when he supposes himself to be in the best possible health, seized with inflammation of the pleura, or of the knee, or with a brain fever, and you may be assured that he is so unfavourable a subject for an operation, that no operation ought to be had recourse to, except as a matter of absolute

necessity, and with a view to avoid some very great and pressing danger. Under any other circumstances, let the operation be postponed until, by a regulated diet, by exercise taken daily, not to an immoderate extent, but yet so as to induce a free perspiration, by the exhibition of purgatives, and perhaps of small doses of the alkalies, you have brought the patient into a better state of health.

But the dangerous inflammations which occur after operations have, for the most part, an entirely different character from that of which I have just spoken. They are low asthenic inflammations, connected with a depressed state of the general system, and requiring a very different treatment from what is required in cases of active phlegmonous inflammations. Of these the most common is that which assumes the form of an exanthematous disease, and which we call erysipelas.

There is no greater source of danger to patients after operation than this; nor is there any more abundant cause of mortification to the surgeon, shewing itself, as it does, not only after the most severe and complicated operations, but after those which are regarded the most trifling: not only after lithotomy, or an amputation of the thigh, but after the removal of an encysted tumor from the scalp, or the division of the prepuce on account of a phimosis, or the laying open of the smallest sinus in the groin, or near the rectum. Perhaps the wound made in the operation is healing favourably, and you suppose that your labours are brought to a prosperous termination, when some day, on visiting your patient, you find that he has had a rigor followed by fever, and at the end of twenty-four hours you find him labouring under erysipelas, which endangers his life, and keeps your mind in a state of suspense for the next fortnight.

It would be foreign to my present purpose to give you a history of erysipelas, or to direct the treatment which it requires. My object is merely to explain the peculiar circumstances under which it commonly arises, and to consider the means of prevention.

It has been supposed by some, that erysipelas is contagious, and that it is from this cause that you find it prevail to so great an extent at particular periods in hospitals all over the world. But you must be aware how difficult it is to distinguish between diseases which are communicated from one person to another, and those which affect many individuals about the same time, because they happen to be placed under similar circumstances, and are subjected to the same external influences. Now it has been my lot to live, during nearly the whole of my professional career, where I had abundant

opportunities of watching the origin, progress, and termination of this terrible malady, and the result is that I am led to believe that it is not really contagious. Exposure to cold and damp, and especially to the influence of these two causes acting in combination with each other, may be the immediate exciting cause; but, if I am not greatly mistaken, it may in nine cases out of ten be traced to a still higher source than this, namely, to a depressed and debilitated condition of the patient's constitution. The depressing effects of the cold north-eastern wind, which in this country prevails on an average for nearly three months between winter and summer, are felt and acknowledged by all, and erysipelas is never more prevalent than it is just at this period of the year. We may in the same manner explain the frequent occurrence of it during a season of extreme cold in winter, or of intense heat in summer. Then you may observe that it occurs especially after operations in which the patient has lost an unusual quantity of blood, and in those who either before or after the operation have been kept on a very low system of diet. We cannot regulate the winds of the spring months, nor the heat of summer, nor the cold of winter, but we may, I am satisfied, do a very great deal towards counteracting their influence, and lessening the danger of erysipelas, by using every possible precaution against an abundant hæmorrhage, by the prudent and judicious administration of nourishment, and by a cautious exhibition of such stimulants as wine and beer, to those who are accustomed to them, when in health, I was educated in the belief that the thing to be most apprehended after an operation was some kind of inflammation; and that the way to prevent inflammation was to keep the patient on a low diet, and as long as I acted in accordance with these views I was meeting with erysipelas at every turn of my practice. Many years have now elapsed since I became convinced that these doctrines are erroneous: that an operation is a shock to the system making a great demand on the vital powers: that the effects of this shock are often much aggravated by loss of blood: that a very scanty diet actually makes the patient more liable to certain kinds of inflammation than he would be otherwise; and that our rule of practice ought to be rather to sustain his powers by allowing him wholesome nourishment; and not to add, to the influence of other depressing causes, that still worse one of starvation. I assure you, and I assert it most positively, that if you attend to the rule which I have just laid down, although you may not prevent erysipelas altogether, you will find it to be a rare instead of a common occurrence, and I can scarcely express to you how much greater has been the comfort of my life, and how much less cause I have had for profes-

sional anxiety, since I altered my mode of practice, than was the case formerly.

Let me not, however, be misunderstood as recommending that the subjects of operations are to be crammed with animal food, or that wine and porter, and brandy, are to be freely and indiscriminately administered. As I have already explained to you, there are some individuals who require to be placed on a more moderate system of diet than that to which they have lately been accustomed, to prepare them for an operation: and in the majority of cases food should be given cautiously for the first day or two after the operation has been performed, and under all circumstances it will be necessary for the surgeon to watch the present symptoms, to make himself acquainted with the patient's previous habits, and to be careful not to administer either animal food or stimulants in such quantity as to excite the pulse, or increase the heat of the skin; or to load the stomach with that which it cannot easily digest. It is dangerous to keep a patient very low who has been accustomed to a very full diet; and it is also dangerous all at once to supply a very full diet to one who has been accustomed to a very scanty fare. An individual who has been in the habit of drinking nothing but water, will require wine, and porter, and brandy, only in a very small quantity, or on extraordinary occasions; while another, who is habituated to the use of such stimulants, cannot be deprived of them more than a very few days, without suffering materially from the privation. I have often in this hospital found it expedient to give a gin-drinker a moderate quantity of gin even on the day immediately following some operation or dangerous accident.

Another inflammatory affection which sometimes arises as the consequence of an operation, has its seat in the veins which have been tied or divided. This occurs under circumstances very similar to those under which we meet with erysipelas: beginning some days after the operation was performed, and being frequently ushered in by a rigor, but being a more formidable disease than erysipelas, inasmuch as it attacks more important organs, and as it generally terminates in suppuration, and in a collection of pus in the cavity of the inflamed vessel. This disease when once begun is little under the dominion of remedies, but much may be done towards preventing its existence: and all the experience which I have had on the subject would lead me to believe that, like erysipelas, it has its origin in a low asthenic state of the system, and that those persons are especially liable to it who have been much lowered by hæmorrhage at the time of the operation, or by a too scanty diet before or afterwards. Arterial, in some instances, accompanies venous inflammation,

and it is to be attributed to the operation of the same predisposing causes.

Another source of mischief after operation is what may be called *gangrenous inflammation*; that is, an inflammation which proceeds almost immediately to a termination in gangrene and sloughing.

This assumes a somewhat different form in different cases.

A large gross fat man, who had been much addicted to drinking spirits, was admitted into this hospital, when I was assistant-surgeon, with an enormous irreducible inguinal hernia in a state of strangulation. I divided the stricture, which was in the external abdominal ring, and did nothing more. The bowels acted freely afterwards, but on the third day the skin in the neighbourhood of the wound was inflamed, and in some places there were vesications on its surface. The inflammation extended rapidly to the rest of the integuments of the abdomen, and in two days more the whole of them were in a state of mortification. The patient died.

You meet with the same disease, though not exactly in the same shape, in what is commonly called "a sloughing stump" after amputation. The stump inflames, and becomes swollen, painful, and tender. You are compelled to loosen the bandages. A dirty serous discharge exudes through the dressings. After four or five days you remove the plasters, and find not only that there is no attempt at union, but that the whole of the cut surfaces are in a state of gangrene. Sloughs become separated, but others are formed, and thus a rapid destruction of the soft parts takes place, leaving the bone projecting, deprived of periosteum, and dead in the centre.

In another case a diffuse inflammation extends along the cellular membrane, producing an effusion of serum and ill-formed pus. At first the surface of the skin has only a dingy reddish hue; but the cellular membrane underneath has lost its vitality. Mortification of the skin follows in patches, and often takes place to a great extent. Sometimes the progress of these frightful changes is rapid, the whole of a limb being involved in them, and the patient sinking, from the impression which they have made on his system, in the course of five or six days. At other times the progress is comparatively slow, and a fortnight may elapse before the fate of the patient, as to life or death, is finally determined.

But, whatever may be the exact character which the gangrenous inflammation assumes, you may be assured that it is always an indication of a low and depressed state of the patient's constitution. According to my experience it occurs especially in those who have been habitually intemperate, indulging in

the free use of spirituous or strong fermented liquors. In persons of such habits it is always prudent for you to avoid the performance of an operation, except it be a matter of absolute necessity. If that necessity should exist, and symptoms of gangrenous inflammation should ensue, bear in mind that to treat it by blood-letting, and what are commonly called antiphlogistic remedies, is, for the most part, the way to make it more rapid in its progress, and more destructive. A treatment the directly opposite to this is what is really required; and with a view to prevention, the safest thing to do, in the case of a person of intemperate habits, is to allow him a certain quantity of his accustomed stimulus from the beginning, that is, even from the day of the operation.

But it is not in drinkers of spirituous and fermented liquors alone that we meet with this kind of inflammation. Persons of a broken constitution from other causes are liable to it also. Dr. Prout has observed that those who labour under diabetes are affected with carbuncle in a great number of instances. A gentleman labouring under diabetes received an accidental wound on one side of his head. Within a week he was dead, a victim to extensive inflammation and sloughing of the scalp. If he had been in health such a wound as he received would have been of no consequence; but in the state in which he was the removal of a small encysted tumor from his scalp would have been equally fatal. I have had the misfortune of losing three patients out of the great number on whom, in the course of the last thirty years, I have performed the operation of applying a ligature to internal piles. In each of these cases, on examination after death, I found diffuse inflammation and a sloughy condition of the cellular membrane between the mucous membrane of the intestine and muscular tunic, and also externally to the muscular tunic as high as the mesentery, and even between its layers. In one of them there was a diseased condition of the kidney, and the urine, which was carefully examined by Dr. Prout, was found to be loaded with albumen, and of a very high specific gravity (1.035). In the second there was a diseased condition of the kidneys also. The urine unfortunately was not examined, but you will know pretty nearly what it must have been when I tell you that in the bladder I found a solid oval body of the size of an almond, and having an appearance like that of amber; in short, a fibrous calculus; and, as it happens, the only specimen of this variety of urinary deposit which has come under my observation. The third case was that of a patient who had laboured under disease of the digestive organs, and was of a broken constitution. At first I had refused to per-

form the operation on him, on account of the general state of his health, and advised him to return to his residence in the country. He came back to me, however, some time afterwards, suffering so much inconvenience that he said he must get rid of the disease at all hazards. I have told you the result. Since these cases occurred, wherever I have had any doubts about the state of the patient's health I have always examined the urine. I do not say that the existence of albumen in the urine is in all cases to prevent an operation; for I have no doubt that it is sometimes accidental and temporary: and you must be aware that in some instances (as in those of hæmorrhoids attended with very profuse discharges of blood), the danger from the disease may be so great that, even if there be danger from the operation, such danger must be overlooked. Still, this condition of the urine should be always regarded as a reason for proceeding very cautiously; and I should be always very unwilling to have recourse to an operation where it proved to be habitual.

For the sake of making the subject as plain as possible, I have described these varieties of inflammation, which sometimes follow operations, as being quite separate and distinct from each other. Still in practice you will not unfrequently find them existing in combination. One patient will have erysipelas terminating in sloughing and abscess, and when you examine the body after death you will find the veins to be filled with pus also. Another has diffused inflammation of the cellular membrane in the first instance, but after some time inflammation bearing all the characters of erysipelas shews itself in the integuments. Again, erysipelas may all at once proceed to gangrene and sphacelus. A young woman had a small scirrhus tumor removed from her neck. On that very evening she had a rigor. On the following morning there was well-marked erysipelas of the skin of the neck, extending downwards over the whole of the anterior part of the chest. No proper reaction had taken place after the rigor: the pulse was small and weak, and the extremities were cold. In a few hours the whole of the skin affected by the erysipelas was in a state of mortification; and in less than forty-eight hours from the time of the operation the patient was no more. A poor girl, who came from the country to be admitted into St. George's Hospital, on her journey had the skin over one breast slightly chafed by the whalebone of her stays. On the following morning she had a severe rigor, from the effects of which she never completely recovered. Erysipelas supervened, beginning where the skin had been chafed, and extending rapidly over the whole of the forepart of

the chest. The skin thus affected became almost immediately gangrenous, and she died with it in a state of complete mortification in the course of three or four days from the commencement of the attack. Both of these cases occurred in the summer, when the heat was most unusually intense; and they taught me a lesson which I have never forgotten—namely, that operations which are not of an immediate necessity should not be performed when the temperature of the atmosphere is very much above the ordinary standard.

There is still another class of inflammatory affections to which the attention of our profession has of late years been much directed, consequent on accidental injuries, and on surgical operations, which I must not pass over unnoticed. The seat of these inflammations is not in the part which has been injured, or which has been the subject of the operation, but at a distance from it. A man has an injury of the head, and, when he dies some time afterwards, you find deposits of pus in the lungs, or abscesses of the liver. In another case there are symptoms of cellular inflammation and suppuration about the neck of the bladder after lithotomy; but death does not take place immediately: the case is protracted; and before he dies the patient suffers from swelling, inflammation, suppuration, and sloughing of the parotid glands; for there is a purulent deposit in each of the knee-joints. In other cases there are deposits of pus in the cellular membranes, or of serum, lymph, and pus, in the peritoneum or pleuræ.

Now it has been supposed by some that, in these cases, the secondary disease is always connected with venous inflammation, and that the circumstance may be explained by supposing that pus secreted by the inner surface of the veins is carried into the torrent of the circulation, and afterwards deposited, even without any inflammatory process, in some other and distant organ. I cannot, however, believe that this is the true theory of the disease. In a case of compound fracture of the right leg, in which the patient died at the end of a month with deposits of pus in the lungs and liver, and in the cellular membrane over the abdominal muscles, and near the left (or opposite) groin, the veins were most carefully examined every where, but no venous inflammation could be detected. In another man, who died after a surgeon had most injudiciously applied the caustic potash to the skin over the occiput, so as to make a slough of all the soft parts, and expose the bone itself, I had the opportunity of examining the body after death, and found the *dura mater* detached from the inside of the bone to the same extent as the destruction of the pericranium had taken place on the outside; and no trace either of

venous inflammation in the injured part, or of suppuration on the surface of the *dura mater*; while the peritoneum was universally inflamed, and the intestines were agglutinated to each other by coagulated lymph. I might, if it were necessary, produce a great number of similar examples; but these are quite sufficient for my present purpose. Having now watched the progress of a great number of cases of this description, I am led to believe that these secondary inflammations are to be attributed not to the entrance of pus into the vessels, and the transfer of it when secreted in one part through the medium of the circulation to some other part of the body, but to the long continuance of a low febrile excitement of the system. However that may be, these cases are replete with danger. The rule is, that they terminate fatally; and the exceptions to this rule are very rare.

Still such exceptions exist, and every now and then you will find the secondary inflammation to subside without going on to the deposit of pus. One such case is probably in the recollection of some of those whom I now address. It was that of the last patient (George Bean), in whom I tied the external iliac artery before I resigned my office as surgeon to the hospital. On the evening after the operation, the whole of the abdomen became painful and tender; the pulse was frequent; the skin hot; the tongue dry, and brown. Some blood was taken from the arm. On the following day, as the symptoms continued, Mr. Cutler, in my absence, repeated the blood-letting. On the second day after the operation, the symptoms being not at all relieved, I destroyed the adhesion of the edges of the wound with a probe, and gave exit to some sanious matter collected within. Finding that the man had been a dram-drinker, instead of having recourse to further depletion, I now ordered him some medicine containing ammonia, and a small quantity of wine, with some beef-tea, &c. On the following (that is, the third) day none of the local symptoms were relieved, and the constitutional symptoms were much aggravated; and in addition to that which had existed previously, there was a most intense pain, with swelling and tenderness in the right shoulder, (that is, the shoulder of the opposite side to that on which the artery had been tied). I now left off all medicine, and prescribed half a pint of red wine to be taken daily, with such nutriment as the stomach would receive. The pain in the shoulder, with some degree of swelling, continued for a considerable time; but on the quantity of stimulus being further increased, this, as well as the other symptoms, gradually subsided, and the patient ultimately recovered. I am induced to mention to you briefly the principal cir-

cumstances of this case, because, as they were instructive to myself, so I hope that they may be not uninteresting to you. They show that a secondary inflammation, such as might be expected in the common course of things to proceed to a purulent deposit, may, in some instances, be made to terminate in resolution. They furnish also an example of a low inflammatory affection in a person accustomed to the use of spirits, being relieved not by bleeding, antimonials, and purgatives, but by a directly opposite method of treatment; namely, the prudent exhibition of stimulants and nourishments: thus confirming the observations which I have already made on this important point in surgical practice.

Besides the various sources of danger after operations to which I have just called your attention, and which are all connected with inflammatory action, there are others not less important which are connected with derangement of the function of the nervous system.

As a wound made accidentally may be followed at the expiration of ten days or a fortnight by symptoms of tetanus, so that made by the hand of the surgeon may produce the same unfortunate result. You must not, however, (in this climate, at least,) allow the apprehension of this terrible disease to enter into your calculation. It is just as probable that it will occur after the most trifling operations, such as you perform daily, as after those which are most difficult and complicated; and the chance of this occurrence after either the one or the other is so very small, that for all practical purposes you may regard it as none at all. If you were to take account of such small chances as this, you would not make a journey on horseback for the fear of being thrown off your horse and killed; nor would you venture to travel in a mail-coach, or in a railroad-carriage. Besides, we have no such knowledge as will enable us to say in what particular case it is most probable that tetanus will occur, nor how it is to be avoided or prevented.

You have heard of, and most of you have witnessed, a disturbed state of the nervous system which sometimes follows local injuries, and to which M. Dupuytren has given the name of traumatic delirium, though that of traumatic mania would be a more appropriate appellation. This disease may follow the injury done by an operation as well as that which arises from an accident. The case is always replete with danger, and not unfrequently, even in spite of the most judicious treatment, the termination of it is fatal. It is not my intention to occupy your time by giving an exact history of the symptoms and progress of the disease: these being, I doubt not, well described in

the systematic course of lectures delivered in this theatre by Mr. Cæsar Hawkins. It is sufficient for my present purpose that I should observe, that the symptoms vary somewhat in different cases, and that the degree of danger varies also.

Now, according to my observations, the cases in which this disturbed state of the nervous system follows accidental injuries and operations in the London hospitals, are chiefly those of individuals who had habitually indulged too much in the use of fermented and spirituous liquors, and especially of dram-drinkers; and in the majority of these cases the symptoms immediately follow the sudden abstraction of the accustomed stimulus. A man who has been accustomed to drink his bottle of wine daily, with the addition perhaps of some porter at his dinner, or to swallow daily one or two pints of gin or brandy, should, after an operation (unless there be some very potent reason against it), be at once allowed a moderate proportion of his usual liquor, and perhaps a still larger quantity afterwards: or if attention has not been paid to this in the first instance, and the symptoms of traumatic mania have begun to shew themselves, wine, or gin, or brandy, with the addition of the acetate or muriate of morphia, should be immediately exhibited, with a view to arrest its progress. In some few cases of persons whose habits have predisposed them to this disease, there may perhaps be inflammatory symptoms of such a nature as to justify or demand the use of the lancet, and other methods of depletion, in the first instance. This treatment, however, will only make the patient more liable to traumatic mania afterwards, and his life will certainly be sacrificed unless you exercise a sound judgment in choosing the exact moment of time in which you shall alter your treatment, and substitute the cautious exhibition of stimuli and opiates for that which you had employed previously.

Nervous symptoms, which are essentially, though not in all minute particulars, of the same character as those which arise in persons who have been too much addicted to strong potations, may arise under other circumstances. In the museum of this hospital you will find the lower portion of a tibia divided longitudinally, and exhibiting the cavity of an abscess in the cancellous structure immediately above the ankle. I shall give you briefly the history of this case, as it will serve to illustrate our present inquiry, and is of much interest. The patient was a young man about twenty-four years of age, and he consulted me rather more than eighteen years ago under the following circumstances. He had an enlargement of the lower extremity of the right tibia, with pain, which was constant and at all times

severe; but he was subject to paroxysms, in which his sufferings were described as being most excruciating. These paroxysms recurred at irregular intervals, confining him to his room for many successive days, and being attended with considerable constitutional disturbance. He had consulted many surgeons, without deriving any advantage from their advice. The remedies which I prescribed were of no more avail than those which he had taken before; and when I proposed to him that he should lose his limb, he gladly consented to the operation. The preparation to which I have referred you sufficiently explains the nature of the disease; but the termination of the case is that which is most to our present purpose. The patient bore the operation with the utmost fortitude, so that a bystander could not have supposed that he suffered the smallest pain. Immediately afterwards, however, he became restless and irritable, and too much disposed to talk. Unfortunately, in the evening there was hæmorrhage from the stump, which ceased on the removal of the dressings and coagula, though not until a considerable quantity of blood had been lost. During the night he had no sleep, and on the following morning he was restless and incessantly talking, with a rapid pulse. These symptoms became aggravated. There was no disposition to sleep, and the pulse became so rapid that it could be scarcely counted. Until the third or fourth day the tongue remained clean and moist; and afterwards it became dry and somewhat brown. There was constant delirium. The pupils were widely dilated; and the sensibility of the retina was so completely destroyed, that the glare of a candle was not perceptible, even when held close to the eye. Death took place on the fifth day after the operation. No morbid appearances were detected in the *post-mortem* examination.

There can be no doubt that the immediate cause of this patient's death was a disturbed state of the nervous system consequent on the shock of the operation, but probably aggravated by the secondary hæmorrhage afterwards; and it is reasonable to suppose that the state of constant misery and excitement in which he had lived for many years, and which, as I was informed, had rendered his temper unusually irritable and capricious, made him more liable to be thus affected than he would have been otherwise.

In other cases, a corresponding predisposition may be traced to an originally imperfect construction of the nervous system, shewing itself, as the patient attains the age of puberty, in the form of aggravated hysteria; or perhaps, at a more advanced period of life, in that of mental derangement. I

have seen several remarkable cases of severe nervous symptoms following even small operations in the former class of patients. The history of such cases would of itself occupy a lecture, and it is sufficient for my present purpose that I should call your attention to them, and that I should state, as the result of my experience, that those who labour under disease of the nervous system are among the most unfavourable subjects for all kind of operation. Even in the case of a young woman who is more than commonly hysterical I advise you to proceed with caution. Her powers of life are weak: she will ill bear any considerable hæmorrhage; and she is more liable than others not only to a dangerous disturbance of the nervous system, but also to those low inflammatory affections consequent on operations, of which I have spoken formerly. I do not say that you are never to recommend an operation to persons of this description; but I am satisfied that you ought to have a very sufficient reason for doing so; and I advise you, if an operation be determined on, to make every possible provision against much loss of blood; and to endeavour to sustain the powers of the system by the careful administration of nourishment, and even of stimuli afterwards.

I need scarcely tell you that, as a general rule, the existence of organic disease in any organ that is concerned in the vital functions should be regarded as a great objection to a surgical operation. To perform the operation of lithotomy where the existence of a stone in the bladder is complicated with disease in the kidney, is almost a sure method of shortening the patient's life. To lay open a fistula of the rectum where there is also disease of the lungs, will probably cause the tubercles and vomicae of the latter to become more rapidly developed. Nothing but the most pressing necessity can justify an operation under such circumstances. Still, such necessity may exist; and when it does exist, you are not to shrink from the responsibility of doing what is required. You may be called to a patient who has an aneurism in the popliteal artery and in the aorta at the same time. To tie the artery in the thigh, where such a complication exists, and where there is nothing in the state of the popliteal aneurism to cause immediate danger, would be madness; but to hesitate to do so, if it were on the point of bursting, would be cowardly and cruel.

Gentlemen, in thus describing to you the various sources of danger after surgical operations, my object has been not to diminish, but to increase your confidence in operative surgery. The surgeon who goes blindly on, not looking at the evils which may probably or possibly ensue, is a mischievous member

of society; while he who proceeds with circumspection, and makes it his business to learn what those evils are, will know how to avoid them, and although he cannot always command success, still it will be only on some comparatively rare occasions that he will experience the bitter disappointment of finding that the efforts which he has made for his patient's good have turned out to his disadvantage.

ESSAYS ON THE DISEASES
OF THE

HEART, GREAT VESSELS, AND
CIRCULATING FLUID.

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(For the *London Medical Gazette*.)

INTRODUCTION.

MUCH as had unquestionably been accomplished by the labours of Valsalva, Morgagni, Lancisi, and Senac, in illustrating the DISEASES OF THE HEART AND GREAT VESSELS, it is only since the means of investigation discovered by Avenbrugger and Laennec have been practised, that any thing like sound pathology, accurate diagnosis, and rational treatment, can be said to have been rendered possible in reference to the affections of the circulating system. Our knowledge of the diseases of this system, in these times, may, in fact, be said to date from the appearance of the celebrated "*Essai sur les Maladies du Cœur et des gros Vaisseaux*," of Corvisart (1806.) But it is to Laennec that we are especially indebted for the remarkable extent and precision of the information which we now possess upon the interesting and important subject of diseases of the heart and its subordinate system of vessels. This great man may not, indeed, have been uniformly accurate in the explanation he gave of the phenomena which he observed; but little or nothing seems to have escaped his observation; and where he did not hew out the path for us, he still put the means into our hands by which we have since been enabled to hew it out for ourselves;—he, the favoured of the gods, gifted with genius, gathered the ample harvest; he left but a few scattered ears to be picked up by all who came after him.

Like so many other great discoveries,

that of auscultation by Laennec was gradual. Even in the Hippocratic writings we are informed that "if on applying our ear for a time to the side we hear a sound like that of boiling vinegar, we shall know that the chest contains water, and not purulent matter." Our ingenious countryman, Dr. Hook, some century and a half ago, speaks of "the possibility of discovering the internal motions and actions of bodies by the sound they make," and of our "being able to hear very plainly the beating of a man's heart;" . . . "the stopping in the lungs, too, is easily discovered by the wheezing." Before the discovery of the stethoscope, Laennec tells us that he himself, M. Bayle, and others, were in the habit of applying the ear to the side in studying diseases of the heart; and in the work of M. Double, entitled "*Sémiologie générale*," published in the year 1817, we observe the same procedure employed in investigating the diseases of the lungs. The amount of positive information obtained up to this time, however, was next to nothing: various unusual or preternatural sounds, indeed, were heard; but the perception of these did not yet qualify the listener to speak in other than the most general terms; he had only assurance of the presence of disease through the medium of another sense; the precise meaning of the sounds he heard was unknown; the pathological states with which they were connected were unimagined until Laennec appeared.

Consulted so lately as the year 1816 by a young woman labouring under the general symptoms of disease of the heart, and percussion and the contact of the hand, as employed by Corvisart, being of little avail, and the immediate application of the ear being inadmissible for obvious reasons, Laennec recalled to mind the well-known fact in acoustics, viz. the great distinctness with which the scratch or prick of a pin at one end of a piece of timber is heard by the ear applied to the other. On the instant he rolled his note-book or quire of paper into the form of a cylinder, and on applying one end of this to the patient's chest, and the other to his ear, he was both surprised and pleased to find that he perceived the action of the heart, as he imagined, in a far more distinct manner than he had ever been able to do by the immediate

application of his head to the walls of the chest. From this moment Laennec conceived the possibility of discovering the character and import not merely of the sounds connected with actions of the heart, but of every sound produced by the motions of the several organs included within the cavity of the thorax. Acting on the suggestion which had thus sprung up in his mind, he applied himself forthwith to the subject, and in the short period of between two and three years he had accumulated the vast amount of information, and found leisure to reduce it into the harmonious shape in which it meets us in his immortal work entitled "*De l'Auscultation Médiate, ou Traité de Diagnostique des Maladies des Poumons et du Cœur*." (2 tom. Paris, 1819.)

This brief sketch will not, I trust, be viewed as out of place here. It is becoming in us as philosophers, and gratifying to our feelings as men, to preface the discussion of one of the most important of the divisions of practical medicine with the mention of his name who has most especially contributed to its illustration; to add as it were a fresh leaf to the wreath that bound his brow.

PHYSIOLOGY OF THE HEART.

Of the Size or Weight of the Healthy Heart.

The researches of Dr. Clendinning* have thrown great light upon this point of primary interest, though they do not appear to have yet received the attention from our continental brethren which their importance deserves†. Dr. Clendinning has shown beyond all question that the heart is one of the organs that goes on increasing in weight from birth to the end of life, to whatever length it may be protracted. The heart has, in fact, an average augmenting weight for each decennial period of life:

From 15 to 30 the heart weighs, on an average,	8½ ounces
„ 30 — 50	8½ „
„ 50 — 70	9¼ „
„ 70 and upwards . .	9¼ „

The average weight of the healthy adult male's heart, for all ages under sixty, Dr. Clendinning states at 8½ ozs.;

that of the healthy adult female's heart at about an ounce less, or 7½ ounces. M. Bouillaud's estimate of the weight of the adult heart is from 8 to 9 ounces. Weber, of Bonn, after clearing the hearts of two criminals, nearly of equal stature, who were executed by the sword in the prime of life, found the one to weigh 10½ and the other 10¼ ounces. This is considerably more than the averages of both Clendinning and Bouillaud; but not more, I apprehend, than was to have been anticipated from the difference of circumstances in which the subjects of observation were placed. Clendinning and Bouillaud's estimates were made from the victims of disease, often the exhausted tenants of the hospital and workhouse; Weber's, again, were from vigorous men, cut off in full health. From eight to ten, and even eleven ounces, according to the bulk and stature of the individual, may probably very safely be assumed as the proper weight of the heart in the healthy adult male.

It is very interesting to learn, as we do from Dr. Clendinning's inquiries, that diseases of an exhausting nature do not all alike occasion a shrinking in the heart and viscera generally. In phthisis pulmonalis, for example, instead of wasting, like the muscular system at large, the heart appears actually to increase in size. The mean weight of the healthy heart, in a given period of life, being nine 1-10th ounces, its mean weight, in the same interval, among the victims of phthisis, is found to be nine 1-6th ounces. Other wasting diseases, —marasmus, atrophy from any cause save phthisis,—are accompanied with a diminution of the heart as well as of all the other structures of the body.—The mean weight of the heart of seven subjects who had died of such diseases as typhoid enteritis, scirrhus induration of the pylorus, chronic pneumonia succeeding measles, &c. was ascertained, by M. Bouillaud, to be about five ounces five drachms; in one instance the organ weighed no more than about four ounces three drachms; in none did it exceed six ounces and four drachms.

Of the Thickness of the Walls of the several Cavities of the Heart.

The walls of the *right auricle* of the heart may be stated to have a mean thickness of about one line: they vary from half a line to a full line and a half.

* *Medico-Chirurgical Transactions*, vol. XXI. Lond. 1838.

† M. Bouillaud, in his elaborate and very able work, entitled "*Traité Clinique des Maladies du Cœur*," 2 tom. Paris, 1841, does not, to the best of my knowledge, refer to them.

The parietes of the *left auricle* are somewhat thicker; they have a mean thickness of about one line and a half, and vary in different cases from three quarters of a line to two lines, or a little more. The walls of the *right ventricle*, towards the base of the heart, where they are generally thickest, may be said to have a mean thickness of nearly three lines, rather less than a quarter of an inch; they vary, in different cases, between one line and a half or two lines, and three lines and a half. The walls of the *left ventricle* are much stronger. They do not appear to vary much, in the great majority of cases, from half an inch. Where they are thinnest, they will measure five lines; where thickest, about seven lines.

The thickness of the interventricular septum appears to correspond very closely with that of the walls of the left ventricle; it may be assumed at from five to seven lines,—a little less or a little more than half an inch.

It is well to be aware that different observers have estimated very differently the thickness of the walls of the several cavities of the heart. Professor Lobstein, of Strasburg, for instance, gives a greater thickness to the walls of the right than of the left auricle, which I cannot explain unless on the supposition of a typographical error. I have followed M. Bouillaud, whose measurements correspond very closely with those which I have made myself.

Of the Capacity of the Auricles and Ventricles.

It used to be supposed that the right cavities of the heart were somewhat more ample than the left cavities. In healthy men and animals there appears, however, to be no sensible difference between the capacities of the two auricles and the two ventricles. It is extremely difficult to fix upon any quantity which should express correctly the absolute capacity of any one of the cavities of the healthy heart; this varies in each particular instance, according to the state of rigidity of the muscular fibres, which is familiarly known to differ with the kind of death which the subject has died, the interval that has elapsed between the death and the time at which the examination is made, &c. The common estimate is about two ounces for the capacity of each ventricle.

Of the Situation of the Heart within the Chest.

The base of the heart, in the great majority of instances, is situated at the distance of from three to four inches below the level of the left clavicle. The right side of the organ corresponds very nearly with the middle line of the sternum; the left side may be traced at the distance of from three inches and a half to somewhat more than four inches to the left of the mesial line; and the apex, as is well known, points to the space between the fifth and sixth rib. The whole organ occupies the region which includes the lower part of the sternum and the cartilages of the fifth, sixth, and seventh true ribs. Inferiorly the heart rests upon the diaphragm over the right lobe of the liver. Anteriorly it is covered more or less completely by the corresponding margins of the right and left lungs; being, as might have been anticipated, overlapped in a considerably less degree by the anterior mediastinal edge of the right, than by that of the left lung. The portion of the heart which is not overlapped by the lungs presents the figure of a lozenge from an inch or an inch and a half to two inches in diameter, and is in relation almost entirely with the anterior aspect of the right ventricle.

Of the Sounds and Impulse of the Heart.

When the ear is applied to the precordial region of a healthy man, between the cartilages of the fifth and sixth ribs on the left side, either directly or by the medium of the stethoscope, we are immediately aware of a push from within, which raises or tends to raise the head of the listener, and of two sounds which follow each other in quick succession. These phenomena are due to the action of the heart; the push being now universally designated the *impulse*, and the sounds spoken of, according to the order of their sequence, as the *first* and the *second* sounds of the heart. The impulse and the first sound are observed to occur together; the second sound succeeds these, and is unaccompanied by any perceptible motion.

All observers were speedily satisfied of the phenomena now indicated, which, indeed, as objects of simple sensuous apprehension, were not open to be disputed. The explanations that have been offered of them, however, have been

extremely various; the causes upon which they depend have been conceived as very different, by different inquirers. Laennec, along with the older writers on physiology, with Harvey, Haller, and Corvisart, held that the contraction of the ventricles was the cause of the impulse, and of the accompanying first sound, and that the contraction of the auricles was the cause of the second sound; the sound in each case being believed to proceed from the shortening of the muscular fibres.

This theory of the sounds of the heart, notoriously at variance as it was with the universally acknowledged physiological order in which the several portions of the heart come into play, remained for a long time unquestioned. Mr. Turner, of Edinburgh, was the first who took public notice of the discrepancy of making the ventricles act before the auricles. With Laennec, he upheld the systole, or contraction of the ventricles, as the efficient cause of the first sound; he ascribed the second sound to the diastole, or collapse of the ventricles.

Dr. Corrigan, of Dublin, who now took up the question, believed the first sound of the heart to be owing to the rush of blood into the ventricles; the second sound he ascribed to the stroke of the inner walls of the ventricles one upon another, consequent upon their rapid contraction. Drs. Stokes and Hart, on the other hand, maintained that the first sound is to be attributed to the systole or contraction of the auricles, and the diastole or relaxation of the ventricles; the second sound they gave to the systole of the ventricles and the diastole of the auricles.

M. Marc d'Espine, in a memoir read at the Royal Academy of Medicine of Paris, in July 1831,* held that the first sound depended on the contraction of the ventricles; the second sound on the diastole or relaxation of the same cavities. It is in M. Marc d'Espine's paper that I find the first mention of the semilunar aortic valves as the efficient agents in producing the second sound; an explanation which he indicates particularly as having been proposed by Dr. Carswell some months previously, but which he combats, and will not admit, the theory upon which it rests not being in accordance with his own views.

Dr. Hope, in the first edition of his work on the Heart (Lond. 1831), ascribed the first sound to sonorous vibrations excited in the blood by the contraction of the ventricles; the second sound he also connected with sonorous vibrations set up in the blood by the effect of the ventricular collapse. In his second edition (1839), Dr. Hope abandoned these views entirely, adopting others held by his contemporaries and predecessors.

M. Rouanet,* acquainted with M. d'Espine's paper, and with Dr. Carswell's explanation of the second sound, which he quotes at length, adopts our distinguished countryman's idea, extends it, and is the first who goes the whole length of connecting the first sound of the heart with the action of the tricuspid and mitral, or auro-ventricular valves of either side of the heart. After giving a brief outline of the various theories of the sounds of the heart which had been proposed up to the moment of his writing himself, M. Rouanet's first proposition is to this effect: '*Que le jeu des valvules ne peut se faire sans bruit*,'—'that the play of the valves cannot go on without producing sounds.'

In the following year, and nearly simultaneously, similar views were either adopted, or advocated, by Dr. Billing, Mr. Bryan, and Mr. Carlile, with various modifications; and the influence and agency of the valves at each orifice of the ventricles, in producing the first and second sounds of the heart, seemed to be brought a great way towards demonstration by the experiments and advocacy of M. Bonillaud†.

Subsequent inquiries, however, went as far to shake the belief, now becoming general, in the large share which the action of the auri-ventricular valves had in the production of the first sound of the heart. The Dublin Subcommittee of the British Association (1835), for example, reverted to the old theory of sonorous vibrations excited by the rapid passage of the blood over the irregular internal surfaces of the ventricles in its way to the mouths of the great vessels, as the principal cause of the first sound. Drs. Williams and Hope, again, were led back by their experiments (1835) to muscular contraction as the cause of the first sound,

* Theses de Paris, 1832, No. 232.

† *Traité Clinique*, &c. 1835.

* Published in Archives Générales, Oct. 1831.

to the utter exclusion of the action of the auri-ventricular valves as any element in its production. In this conclusion they were supported by the Report of the London Committee (1836), which inferred that the constant element in the first sound is intrinsic, and consists in the sudden transition of the ventricles from a state of flaccidity in diastole to one of extreme tension in systole. Finally, the Reports of the London Committee for 1837, 1838-39, and 1839-40, appear to me satisfactory upon almost every particular involved in this intricate question. It would now seem to be no longer doubtful that the first sound of the heart is mainly due to the tension of its muscular fibres, and that the auro-ventricular valves only influence it by rendering its beginning sharp and definite. That the first sound of the heart is not connected with the action of the mitral and tricuspid valves, forced sharply together by the action of the column of blood suddenly grasped by the ventricles, is made obvious by the fact, that it is still distinctly audible in the heart cut out of the body of a living animal and pulsating upon the hand or on a table. The first sound of the heart is imitated with amazing closeness by the rapid contraction of the abdominal muscles in a forced expiration. The first sound is also, in certain cases, aided or increased in its extent and loudness by the heart striking the parietes of the thorax at the moment of its systole. In general, however, when the heart is beating naturally, the first sound is not sensibly connected with the impulse.

The impulse of the heart was long explained, to the satisfaction of all, on the supposition of a libration of the organ at the moment of its systole. Resisted by the bodies of the vertebrae behind, and resting in some sort upon the two great arteries to which it gave origin, the aorta and pulmonary artery, it was conceived that when they were suddenly distended with blood, the apex of the heart must necessarily be projected forwards, and so made to strike against the ribs. But the most careful study of the action of the heart in the living animal discovered no such libration upon the great arteries as Harvey and Haller, and all the most distinguished physiologists of the by-gone age, described.

The cause of the impulse was now sought for in the particular arrangement of the muscular fibres of the heart which modern anatomy had unfolded. The origins and insertions alike of the muscular bundles which compose the ventricles are the fibrous rings that surround the outlets at the base of the heart. In contracting, the muscular fibres tend to draw every part of the ventricles towards the base; but it is a law in muscular motion, that fibres shorten during their contraction in proportion to their length when relaxed; and as the muscular fibres which pass from the base to the apex are longer on the anterior than on the posterior aspect of the heart, it follows that the apex will not be approximated to the base in the line of the axis of the ventricles, but that it will be drawn towards that side where the fibres are longest, *i. e.* forwards, by which means the true tilting of the heart is produced*. But this rising of the heart upon itself is not the sole, or even the principal, cause of the impulse; it is mainly due to the alteration that takes place in the shape of the heart suddenly grasping the unyielding charge of blood which it contains in its interior. From an elongated and triangular form it is suddenly moulded into one that is nearly globular, and, resisted behind, it leaps forward and strikes the anterior walls of the chest†.

The following is a brief statement of the whole subject, as regards the contractions, motions, and sounds of the heart:—The impulse, the pulse of the great arteries, and the first sound, occur along with the systole or contraction of the ventricles. The second sound occurs at the moment of the diastole or relaxation of the ventricles.

The cause of the impulse appears in the main to be connected with an alteration in the shape of the ventricles.

The cause of the pulse in the arteries—which is consequent on, rather than coincident with, the contraction of the ventricles—is the wave of blood propagated from the heart to the extreme divisions of these vessels.

The cause of the first sound is especially the sudden tension of the mus-

* Carlile, 3d Report Brit. Association, 1834.

† Dr. Clendinning says that there is dilatation every where at the moment of systole; but this is impossible. There must be shortening in the long diameter of the heart in the same proportion as there is extension in the short diameters of the organ.

cular fibres of the ventricles, and, in some less degree, the sudden closure of the auro-ventricular orifices by the mitral and tricuspid valves effected by the column of blood forced against them by the rapid and powerful grasp of the ventricles.

The cause of the second sound is the tension and sudden closure of the sigmoid or semilunar valves situated at the root of the aorta and of the pulmonary artery, effected by the column of blood powerfully acted on by the elastic force of the arteries just injected. The necessary prelude to the second sound is therefore the diastole or relaxation of the ventricles; its effectual agent is the elastic power of the aorta and pulmonary artery; that upon which it immediately depends is the smacking together of the semilunar valves.

The phenomena which constitute the action of the heart in their order are these:—First, the auricular systole or contraction, which, although accompanied by a slight sound in reality, is not to be appreciated externally by either sound or motion; secondly, the ventricular systole and auricular diastole, proclaimed by the impulse of the heart, the arterial pulse, and the first sound; thirdly, the ventricular diastole and auricular systole, not indicated by, nor effective in producing, any appreciable phenomena, but instantly followed, or rather at its beginning accompanied, by the second sound, the click of the aortic and pulmonic semilunar valves. After the second sound there follows a period of repose and of silence to the auscultator, which continues to the instant of the ventricular contraction and occurrence of the first sound.

The interval occupied by the series of phenomena now described, connected with their regular recurrence, is spoken of as the *rhythm* of the heart. Supposing the whole interval to be divided into four equal parts, the ventricular contraction occupies about two of these, the ventricular relaxation one, and the period of ventricular repose one. This was Laennec's appreciation. Others have differed in their reckoning of the different parts of the interval. Dr. Williams, for example, holds the ventricular systole to occupy two divisions; the diastole rather less than one; the repose rather more than one. I believe that the rhythm differs in different subjects; it differs very widely in cer-

tain pathological conditions of the heart.

The impulse of the heart varies greatly in different cases. That of the perfectly healthy heart of a subject not over excitable or nervous, is only to be felt by placing the stethoscope, or the ear, on some point between the cartilages of the fifth and seventh rib of the left side. In susceptible or nervous subjects the impulse is often perceptible over a considerably larger space, without the heart being therefore diseased. In fat subjects the impulse is sometimes not to be felt at all, or at most over a single and very limited point. In lean and vigorous subjects, on the contrary, the impulse is scarcely ever otherwise than distinctly appreciable over some square inch and half or so of the left thoracic parietes.

[To be continued.]

ON MORTIFICATION.

By R. A. STAFFORD, Esq.

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(For the London Medical Gazette.)

THERE has lately been in the St. Mary-lebone Infirmary a most interesting case of mortification or gangrene under my care. It occurred in a poor boy who had been nearly starved to death. He was found in Gee's Court, leading out of Oxford Street, and was brought to the Infirmary by two policemen. The account he gave of himself is as follows:—That for a length of time he had been sometimes in and sometimes out of work; and from the uncertainty of getting employment, he had been frequently nearly a week together without tasting food; and not liking to go to the workhouse, all he has had to subsist on has been a cup of tea and a bit of bread and butter, given to him occasionally by those in the same house almost as poor as himself, and who stinted themselves to support him. His friends at length left the house, and some of them promised him to go to the workhouse to state his distressed condition. They did not, however, do so. He gradually became weaker and weaker, and no one went near him; he at length contrived to crawl up from the kitchen in which he was lodging, and placed himself at the door of the

house, where he was seen by a policeman. When admitted he had not tasted food, or even a drop of water, for four whole days !

The present condition of the poor fellow is, that both of the lower extremities are mortified ; in the right leg the gangrene begins about three inches above the ankle, and involves the whole foot, it being black, and apparently the death of the part is complete. In the left leg the mortification begins about two inches from the knee, and extends all over the lower part of the limb, looking even blacker than the other leg. The stench is horrible, and the whole sight most disgusting.

The circulation of the poor boy is in the lowest state of languor ; the pulse is hardly perceptible, the voice feeble, and the countenance expressive of the greatest degree of exhaustion. So inclined is the whole body to mortify, that the tip of the nose is gangrenous, and the points on the patellæ are disposed to slough.

On his arrival into the Infirmary he was immediately placed in bed, and poultices of bran, mingled with a solution of chloride of lime, were applied to the mortified limbs, and also a turpentine liniment to those parts where there was any appearance of life. He was carefully fed with beef-tea, giving a small quantity every now and then, so as not to overload the stomach, or at first to stimulate him too much. By degrees, and as he could bear it, the quantity of food was increased. He was ordered bark (quinine), and wine cautiously and sparingly. These remedies were gradually increased in dose and strength as he became stronger ; and when the sloughs began to separate from the living parts, he was ordered a meat diet, porter, eggs, and other nourishment. The mortified surfaces were incised both longitudinally and laterally in every part. The separation of the mortified from the living parts went on rapidly, and the left leg was completely barked, or denuded of the integument, so that in the greatest part of the limb the muscles and tendons were exposed almost as clean as if they had been dissected, the foot being quite dead : in the right the mortification had extended through the tendo Achillis down to the bone ; and the ligaments of the ankle-joint had given way.

The boy had gone on well for five weeks, and it was proposed, when his general health was sufficiently restored, to remove both limbs at the spot of the line of demarcation of the separation of the living from the dead parts. He was, however, without any apparent cause, suddenly taken with a shivering fit ; fever supervened ; he refused all food, and died in four days.

His body was examined. All the viscera were healthy, and no other cause could be found to account for his death than the mortification.

Mortification, besides the terms which have been employed to express its different characters—sphacelus, slough, &c.—has been divided into two principal varieties, humid and dry gangrene ; or what I think might be a better term, would be acute and chronic.

Humid gangrene is where the mortification is moist, and contains the fluids of the part when it died.

Dry gangrene is where the death of the part has taken place gradually, from a diminished circulation through it, or from a disease of the vessels. The gradual death of the part is well exemplified by gangrena senilis. Here the arteries are ossified, and the flow of blood through them is so diminished, that first the extremities and points of the toes become mortified from want of a proper supply ; then the first phalanx, creeping on, drying as it goes, to the second and third joint of the toes ; and at length the whole foot becomes involved.

In humid gangrene, however, the death of the part is immediate ; the inflammation has been so violent, that sloughing has quickly taken place, and there has been no time for the fluids to evaporate : hence the broken-down and mortified structure remains moist.

Mortification arises from the undue circulation of blood in a part : either that there is a deficiency, or total absence of it ; or that the circulation through it is too great, whereby inflammation arises to such a height as to destroy the structure of a part, and cause its death. The process by which it takes place, from whatever cause it may arise, is, first, that the capillaries of the dying part become plugged up by the coagulation of their contents, and then by the coagulation of the blood in the larger vessels ; consequently circulation through them is at

an end, and accordingly the part so affected undergoes that change which occurs to the whole body after death.

Mortification or gangrene may be caused in various ways: by inflammation, such as we see in phlegmonous erysipelas; the carbuncle; wounds after severe accidents, &c.; by the want of a proper nourishment of a part; by a disease of the heart, this organ not having sufficient power to throw the blood to the extremities—a case of which I once saw at St. Bartholomew's Hospital; by cold, for instance frost-bitten parts; and by inanition from want of food, like the case already related at the beginning of this paper. Mortification may also be caused by other means. There is hospital gangrene, a disease occurring in crowded wards, and of an infectious nature. In this disease, wounds, of whatever character they may be, become gangrenous, being of a putrid pulpy texture; and when one patient of a ward has been attacked by it, the same character of gangrene appears in the wounds and sores of others. Of late years the disease has been of rare occurrence, as hospitals are more cleanly kept and better ventilated than formerly. Now and then, however, hospital gangrene makes its appearance, and more particularly in military hospitals after battles, when the wards are crowded by the wounded. It appears that hospital gangrene begins by the formation of a vesicle on the edge of a sore, containing a watery fluid of a livid or reddish-brown colour. It is attended by an extreme stinging pain; and when the vesicle breaks, sloughing commences from the spot, and spreads all over the wound, forming its surface into a pulpy unorganised mass. When this slough is separated, the ulceration continues; the cavity of the wound increases in size, and its edges become indurated. The sore discharges at first a thin glutinous matter, and afterwards matter of a thicker character, being of a dirty yellowish white, and sometimes of a black or brown colour.

Animal poisons may produce gangrene; for instance, a peculiar syphilitic poison causes sloughing phagedena, which is proved by the part being destroyed by nitric acid, and it recovers. Putrid meat on a wound will give rise to it also. I have seen cooks and

butchers, who have wounded their fingers where the meat was tainted, get gangrene of the wound; and in one case I was obliged to amputate the finger. In another case, also of a gangrenous sore on the finger of a cook, which could not be accounted for, its character was so peculiar, that I was led to inquire whether she had handled tainted meat. I found this to be the case, and it could be traced to this cause. Those who have to do with the hides of animals are often the subjects of a peculiar black gangrene, or mortification. There are perhaps several spots on the fingers and hands which become mortified, and the slough is very dark, and of so peculiar an appearance that it cannot be mistaken by those who have seen it. I remember several instances where persons have presented themselves at hospitals with black sloughing wounds on their hands, and on inquiry their employment has been connected with the hides of animals.

There is a disease termed *cancrum* or *gangrena oris*, which occurs after measles, or fever. It first shows itself by a dark vesicle on the lips, when ulceration and sloughing commence. The sloughing goes on rapidly, and no application can arrest its progress. It destroys, perhaps, more than half the cheek; and the patient being in a low condition, generally sinks under it. A case of this description happened a few weeks ago in the St. Marylebone Infirmary, under the care of Dr. Clendinning, and I saw it also myself. It was in a child of five years of age, who had had the measles. Numerous applications were employed, even to nitric acid, but none of them had the least effect. The child also was supported by bark, wine, and nourishment, but it died.

Mortification is often produced by bad food, and I believe that almost all the sloughing sores we see which occur among the poor arise from want of proper nourishment. I have endeavoured to trace the origin of the sloughing ulcer seen in hospitals, and I have found, with very few exceptions, that the individuals suffering from them have been ill fed, lived in ill-ventilated rooms, and have suffered the extremes of poverty. A very curious description of mortification is recorded, which is caused by eating bread made from bad or diseased rye; and the same also has happened from eat-

ing the bread made from black wheat. This species of gangrene is of a dry nature, and takes place gradually. Authors inform us that this gangrene is as dry as touchwood, or as the limbs of a mummy. It is impossible to account for it, but no doubt the ergot of rye which is eaten has some effect on the blood, causing its coagulation and want of vitality in the extreme vessels. Pressure will give rise to mortification when the patient is in a debilitated state. This we too frequently see in those who have long lingered from disease. The parts which come chiefly in contact with the bed, from natural pressure made by the weight of the body, become mortified; and when this occurs, it generally accelerates the death of the patient. I believe it often has happened in chronic diseases (such as those of the joints, the spine, &c.) that this mortification arising from pressure has prevented the recovery of the patient, which otherwise would have taken place. From the feebleness and the emaciated state of the body, it has been impossible to prevent it: consequently the patient has to contend with a double disease, which will necessarily wear him out. The profession and the public cannot be too much obliged to Dr. Arnott for the invention of the water-bed—an invention which, though simple, will conduce to the comfort and prolongation of life of thousands, and the recovery of many. It is much to be regretted that the inventions which tend to save the life of our fellow creatures are not more noticed by the government. Some public testimony to an individual who has employed his talents for the good of the community would be an encouragement to others to follow the example.

I have seen, within these last few years, a description of gangrene which does not appear to me to be common. It breaks out in patches on different parts of the body, and more particularly in the lower extremities, being, perhaps, about the size of the palm of the hand. The part at first is extremely hard, and its circumference is well defined, feeling almost like a foreign body being introduced into the cellular structure. There is a slight red blush at first upon it, and the part is slightly elevated, but it does not appear to be

attended with great pain. The redness of the skin increases, and it becomes of a deep purplish blush. In a few days the whole mass which was hard becomes a slough, resembling a rotten pear, being shreddy and pulpy, and of a dirty brown or yellow colour. The slough is gradually separated from the living part, and a deep rocky irregular sore is left with indurated edges. It generally happens that these patches of gangrene occur in more than one spot at a time, and they go on breaking out one after another for a continuance; and while one ulcer made by it heals, another spot makes its appearance. It is evident that this disease, like carbuncle, arises from a lowered state of constitution.

I need hardly say that the strangulation of a part produces mortification; for instance, in hernia, when the gut has been incarcerated too long before the operation is performed, it mortifies. So likewise, when we artificially place a ligature round a part—such as a polypus, a hæmorrhoid, or the tonsils of the throat, &c.—it dies. Extravasation of the urine will give rise to sloughing abscesses, and mortification of the cellular structure. These cases are very common, and of almost daily occurrence.

The sudden stoppage of a current of blood, when the anastomosing arteries have not sufficient power to carry on the circulation, will often cause mortification of the limb where that current is so arrested. For instance, in Aneurism, such an occurrence may happen. It has, to my own knowledge, often taken place in popliteal aneurism, when the femoral artery has been tied. I have seen four or five cases of it, where the leg has mortified after the operation, in consequence of which the patient has died. To remedy so fatal a catastrophe, if possible, would be most desirable; and I have a proposal to make to prevent a recurrence of it.

We all know that when so large a vessel as the femoral artery is tied, that the circulation is carried on by the profunda femoris, and its anastomosing branches with those of the anterior and posterior tibial arteries. Now it is impossible to know whether these vessels are strong or weak—large or small. If they are strong and large, they may carry on the circulation very well; but

if they are weak and small, it is impossible they can do so: therefore the mischief takes place. Now I propose that a tourniquet be placed on the femoral artery below the origin of the profunda, and as near to the aneurism as possible, for a few hours every day, for some time before the operation—a month perhaps, or as long a time (should experience prove the utility of this method) as it may be required. By doing this, the current of blood through the main trunk of the femoral artery would be gradually stopped, and the circulation would be carried on through the profunda and the anastomosing vessels; whereby they all would be enlarged and strengthened by degrees, and consequently would admit the blood more readily through them. When, therefore, the operation of tying the femoral artery is performed, the profunda and anastomosing vessels would already have been accustomed to carry through them the increased current of blood; and consequently the danger of mortification of the limb would be much less, if not altogether prevented.

[To be continued.]

HOMŒOPATHY.

To the Editor of the Medical Gazette.

SIR,

I HAVE just read an attack upon Homœopathy, (the principles of which system I follow in my practice,) from the pen of an anonymous correspondent in your last number. The tone by which it is distinguished—unbecomingly alike to the character of a gentleman and a physician—would warrant me in treating it with disregard; but the importance of the question at issue induces me to overlook all other considerations, and I have, therefore, to request you will do me the justice to insert the following remarks.

If your correspondent believes that, by the style which he has adopted, he can inflict injury upon the new science, that belief is most erroneous. Abusive words prove nothing but the excitement of passion, and the want of self-control in him who uses them. The time is now come to discuss gravely, and in a manner suitable to a scientific question, a subject which is of the deepest im-

port. The epithet of “quackery” attached to homœopathy has not the least value, at a period when thousands of persons, of all stations in society, having derived benefit from the system, are prepared to demand a calm and respectful examination of its merits. It is in vain to believe that the public will now rest satisfied with the statement, that hundreds of physicians have come forward, from all parts of the earth, to feign an important discovery, and to assert a superior practice founded only on delusion.

Your correspondent does not perceive the real consequences of his argument, when he rashly accuses homœopathists of causing the death of Lady * * * and Madame Malibran. What will he say of the numerous deaths which daily occur under the hands of the most able professors of the old practice? Will he aver that, in these circumstances, the patients were incurable, but that such cases are never placed under the care of homœopathists? He will hardly venture to incur the charge of ignorance or bad faith which must attach to him from such a course. The small number of fatal cases in homœopathic practice, compared with all other modes of treatment, is shown by statistical records, and is the great fact to which its disciples point.

Homœopathy was at the first presented to the medical profession—as it still continues to be presented—in a candid, sincere, and practical manner, with the hope that they might be induced to examine and test its merits. The minority (myself one of the number) feeling that the most imperative duty of the profession is to examine faithfully every doctrine that is properly presented, came forward, and without hesitation tested the alleged facts, amidst numerous obstacles, and openly avowed our recognition of them so soon as they had been established by unquestionable proof. The other members of the profession—whether through inability to understand the important nature of those facts, alarm for their private interests, indifference, or blind devotion to the past, it is not for me to determine—refused to bestow the slightest attention, and opposed each point of evidence with violence, which increased in proportion as this evidence assumed a higher character. This difference of view was the origin of two hostile par-

ties which arose in medical science; the one striving by every means to demonstrate the advantages of the new doctrine, the other using all their efforts to overthrow them. But it must be remembered that each party is formed of physicians, and that mutual feelings of esteem and courtesy should still exist between them, since both are actuated by the same motive,—the desire of promoting science for the attainment of one common end, the most complete relief of the sufferings of humanity.

Such are the real and relative positions of homœopathist and allopathist. Similar circumstances have taken place whenever a new discovery has enriched the annals of science, the only difference being that the adverse parties have borne other names. Those who turn to the past will satisfy themselves of the truth of what I now advance; and will gain at the same time the useful conviction, that the progress of truth is ever onward, and that opposition can only accelerate its triumph.

Where, then, are we to look for an umpire in these intestine differences? Where are we to find a competent authority to pronounce an impartial judgment? We must turn to the public;—the public, whom your correspondent attacks as being incompetent to decide!

To me it appears that there is no judge so competent. It is the public that must suffer from disease; it is the public that must be killed or cured by physicians. Depend upon it, sir, the people have an instinct on this point which cannot deceive them. They soon learn to discriminate between the physician by whom they are cured and him by whom they are injured; and they care very little, and think still less, about any thing beyond.

The reasonings of your correspondent may be plausible, but they are certainly illogical. He inquires if our commander-in-chief would upon the mere proposition of a person ignorant of the art of war recommend the adoption of a piece of ordnance, or of a manœuvre of military tactics. But he altogether mistakes the question, which is simply this: would not our commander-in-chief, from *whatever quarter* a proposition might be tendered, attentively examine it, and furnish the means of ascertaining its usefulness; if the results were satisfactory, would he not

give orders to test its merits upon a large scale, until a positive conclusion could be attained, and this once arrived at, would he not recommend its general adoption? Such is at present the course adopted in the highest classes of society in relation to homœopathy. Having individually tested it, they now wish for more general proofs, and when these shall have been furnished them they will decide upon its definite adoption. This is the true course for prudent inquirers, and it appears to me to be much more rational than that which your correspondent proposes: viz. that the claims of the system should be submitted to the decision of a committee of its opponents. Unfair, however, as the proposition is, we are prepared to accept it, upon one condition: that the committee shall be appointed by government, and that it shall be composed of an equal number of physicians, and of members of the highest class of society: of those who, like a noble earl, well known for the interest which he takes in medical science, have not thought it beneath them, in order to complete their general education, to take a place upon the benches of a surgical class. Such persons are not likely to be imposed upon, and there are few who will doubt their impartiality.

Your correspondent has been told that the medicines which we use are totally free from all dangerous properties; but he affirms his disbelief of this assertion. He is, on the contrary, of opinion, that they may be the source of a long series of accidents of the most alarming nature. A little further on he states, that no one need wonder that homœopathic globules should with the assistance of the imagination have cured disease caused by imagination. Also, that many patients have been restored to health in cases of chronic disease of the stomach, and have been a theme of self-congratulation for us, whilst diet, the breaking of certain habits, the disuse of too frequent purgations, &c. would have easily removed them.

Now let us weigh these assertions: either the homœopathic medicine is totally devoid of power, and in that case it is easy to comprehend that no cures can be attributed to it, or else it is powerful, in which case, if administered, it must either do good or harm; it must be followed by some kind of

effect, therefore; it must either cure or aggravate chronic diseases of the stomach. Hence it will be seen that if they disappear, the medicine must have contributed to that result.

Your correspondent goes on to quote a few cases. The first is that of a gentleman, who does not take the homœopathic medicine, and who, because he recovers through the agency of a judicious diet alone, concludes that homœopathy is a delusion. If this fact proves anything, it certainly proves that the strict regimen which we prescribe has been wisely considered, since if it be not always sufficient to cure, in some instances at least it leads to that result.

But I need not waste my limited space in pointing out each individual fallacy of the anonymous cases of your anonymous correspondent. There is one case upon which I have to throw a light sufficient to silence all false accusations which the enemies of homœopathy may attempt to ground upon it. I sincerely regret that I am compelled to enter into these details: the fear of personal damage would not have induced me to break silence; but the cause of homœopathy is involved, and I feel it to be my duty to hesitate no longer. I allude to the case reported in your number of the 6th of January.

Lady * * * was in the enjoyment of perfect health up to the age of thirty, at which period she was seized with the first symptoms of a disease of the digestive organs, which was designated by some of the able physicians whom she consulted as an affection of the mucous membrane of the stomach and intestines; and by others as an engorgement of that membrane. She received at their hands various medicines and purgatives—such as blue pill, colchicum, &c. which gave her only temporary relief. In 1835 she consulted Dr. Stapf, an homœopathic physician, who, in the space of three months, removed all the gastric symptoms by means of sulphur and lycopodium taken alternately; but there remained deafness and noises in the head, which gradually increased until March 1840, when Lady * * * came to consult me, and stated the following symptoms:—

Intermittent headaches, accompanied by gastric derangement and deafness: the pain is seated in the temples, and extends to the eyes: the forehead and vertex are also affected. Occasionally

pains are felt as if the membranes of the brain are diseased; and there is a constant buzzing, with beating and sense of determination of blood to the right side of the head and to the right ear, where the deafness, which commenced and increased with the other symptoms, is most marked. The eyelids feel weighty, and fall heavily upon the eyes when the patient is quiet or near a window exposed to the rays of the sun. The face is much flushed after meals, chiefly after those consisting of the most stimulating food—such as luncheon and dinner: at these times much heaviness and sense of lassitude are experienced. Constant pains at the epigastrium, sometimes with sense of pressure: always alleviated by ingestion of food. Feeling of excoriation in the stomach and abdomen, sometimes resembling that produced by a sore or the presence of an acrid substance: when these sensations are most marked similar pains are felt in the head. At other times there is a sense of emptiness and sinking in the stomach, flatulence, tendency to constipation, general lassitude, disinclination for exercise, pains in the tarsal articulations, uneasiness in the legs in the evening, and feelings of anxiety. Lately there has been roughness and redness of the skin, with heat and pruritus, usually in the bend of the elbow, but sometimes general without eruption. Sleep in general good, but of late disturbed by dreams. Recently much drowsiness during the day, falling asleep after breakfast, languor in the morning, and amelioration of these symptoms in the evening. When in health the disposition is amiable, lively, and kind; since the disease there has been at times indifference, alternately with anxiety about the future, and general lowness of spirits.

From these symptoms I judged that the seat of the disease was two-fold—the digestive organs and the brain. I at once recognized the gastro-enteritis and chronic meningitis of authors. I prescribed successively *coccus*, sulphur, *nux vomica*, *lycopodium*, *china*, *calcarea*, *carbo-animalis*, *nit. acid*.

Moreover, I advised a strict course of diet. I forbade the use of all kinds of excitants, more particularly those which act both on the digestive organs and the brain—such as beer, collée, spirituous drinks, &c. I also forbade

acids, spices, and mustard, which would tend to aggravate the inflammatory state of the stomach and intestines.

Reason must guide us in all that we do in medicine. It has been asserted that the cures due to homœopathy have resulted rather from a judicious diet than from the effects of medicine. We are very far from denying the importance of diet, but we cannot attribute to it so great an influence. If diet alone is sufficient, either to arrest the progress of disease, or to eradicate it completely, of what use are the longlists of formulæ and drugs which are used by the allopathists? I have myself practised allopathically, and have always availed myself of the aid of regimen, but only as a useful adjunct to other means.

If it be objected that indigestions, such as indigestions, slight colds, &c. have been removed by regimen, we will answer, that in these cases nature alone, without the assistance of regimen, would most likely have succeeded. At all events, regarding the homœopathic cures as arising from these causes, we will simply say to our fellow-practitioners, "do the same." The attempt will be of much benefit to mankind, who will thereby escape the numerous sufferings arising from the treatment at present used. By this course, too, they will speedily prove that certain cures claimed by homœopathy, and which are deemed impossible under the old method, may really be attributed to that practice.

Whether the diet be or be not the cause of cure, one thing is certain—viz. that the use of excitants aggravates all kinds of disease, and especially those of the digestive organs and the brain. I lay much stress upon this point, because it is one of much importance, as will soon be shown.

I must here devote a few words to the *mode of action of stimulants*. *Fermented drinks*, taken internally in small doses, and diluted in water, excite the surfaces with which they are thrown in contact. They produce nervous irritability and an increased action of the system; consequently there arise at the same time peculiar phenomena from the excitement of the brain: thus, sensations are more rapid, the intellectual faculties more acute, the thoughts flow more distinctly, and are expressed with greater facility. In this state,

which may be called one of agreeable exaltation, what are the phenomena taking place inwardly? An increase of the circulation, and more decided activity of secretion and exhalation. If the spirituous beverage be taken in a larger quantity, there will then be added to the above phenomena animated look, contracted state of the pupils, more decided expression of countenance, and an increased development of muscular power. According to the character of the individual we shall find either talkativeness or extreme taciturnity, cheerfulness or generosity and tenderness, or rage and vengeance. At this period the circulation becomes so active, and the nervous centres so excited, that we find the first symptoms of some forms of cerebral disease. It is the whole economy in a state of the most intense excitement. To this stage, if the dose of the beverage be still increased, intoxication succeeds: confusion of thought and of sight, and difficulty of articulation, supervene; muscular action becomes slower; the head heavy, and the mouth open; there is inclination for sleep, turgescence of the cervical veins, powerful beating of the carotids, and oppressed, short, and suspicious respiration; while the pulse, which at first was full and hard, now becomes slow. Does not this state bear a close resemblance to cephalitis, of which, as is frequently seen, effusion of blood may be a sequel? It is now that the economy, in order to get rid of the morbid cause (the fermented drinks) induces an increased activity of the functions of secretion and exhalation. Clammy sweats cover the body; violent vomitings take place; blood sometimes flows from the nose, &c.

Stimulants administered at the first mentioned dose are generally considered to be strengthening; and when this first stage is not exceeded, it is also generally believed that it can be productive of nothing but benefit to the economy. But if these phenomena be more closely examined, it will be found that the excitement, however feeble it may be, is not the normal condition; and the proof of this is, that if the organism is very frequently placed under the same influence, chronic gastritis, or chronic cephalitis, will, sooner or later, be seen to arise. How much more danger of this result will there be

in the case of a person already disordered!

Fermented drinks, as well as other stimulants, such as coffee, tea, acids, mustard, spices, &c. have a degree of action which is pretty nearly equal upon all the surfaces with which they are thrown in contact. No doubt can be entertained on this point. Whether placed upon the tongue or introduced into the stomach, they immediately generate a sense of heat, with a degree of determination of blood proportioned to their quantity. This species of phlogosis, transient at first in a healthy person, causes permanent mischief in one who is not in a perfectly normal state. Although acids, spices, and mustard, unlike fermented drinks, have not the property of acting simultaneously upon the stomach and brain, they are, nevertheless, injurious to the mucous membrane of the stomach and intestines, inflammation of which frequently ensues.

Lady * * *, besides the gastric symptoms, presented others of cephalalgia, accompanied by deafness, and beating and noises in the head, denoting that if the affection of the brain was at first purely sympathetic, it had now become the principal disease. It was, therefore, still more imperative to forbid the use of excitants, which would keep up a constant state of congestion, from which serious structural change would inevitably follow. Unfortunately, the physician by whom she was attended did not adopt my views. Lady * * * was of course easily led by an opinion which was not at variance with her usual habits, and consequently, after a few visits at distant intervals, I heard no more of the case, further than that, after consulting me, she continued to take porter, wine, tea, coffee, and other such stimulants as she had previously been accustomed to. On the 15th of December, 1842, I received a note, desiring my attendance at a consultation; her Ladyship having been seized with convulsions on the preceding night. It at once occurred to me that the case was most dangerous, and that it was the termination of a chronic disease, aggravated by a course of diet which would have had a tendency to produce it, even if it had not already been in existence. I hastened to comply with the request, and will

now mention the condition in which I found the patient.

A state of anxious agitation which it is impossible to describe. Four persons could scarcely restrain the movements of the sufferer. The eyes were fixed, and the features deeply altered. I desired an account of what had happened previously, and the following particulars were detailed:—

During the last fortnight Lady * * *’s disorder had been rapidly getting worse; the headaches had considerably increased in violence, whilst the circulation had become imperfect in the extremities. Scarcely any sleep was obtained; if any, it was bad. The strength had been rapidly decaying, the appetite had been completely lost, and to revive it the habitual stimulants had been resorted to.

On the previous Wednesday, at his usual visit, Lady * * *’s physician found her worse than on the preceding days. The pulse was small and feeble, the headache so acute that she had not slept at all—(the patient was then in the eighth month of gestation). As she complained of much weakness, he ordered some port wine. She took two glasses, and went out for an airing, which somewhat revived her. At dinner the appetite had so completely failed, that she could eat nothing. At midnight, though her appetite had not returned, she took some supper: after this her state of agitation increased so much as to create the utmost alarm. The wine had given some relief in the course of the day; two more glasses were therefore given in the middle of the night, but at this time it had no other effect than to increase the sufferings of the patient. An accoucheur, occasionally practising upon homœopathic principles, was then sent for. He administered an homœopathic medicine; *belladonna*, I believe, at the dose of one globule. After the *belladonna* the patient complained of frequent bluish sparks, &c. passing before her eyes, and then he ordered a mixture to be taken, containing ether, spirits of camphor, &c. The patient then insisted upon being left alone: she tried to sleep, but could not succeed.

The disease went on very rapidly: the anxiety and debility were extreme. Brandy was then given to the patient, soon after which she fell into a state of

insensibility, and was seized with violent epileptiform convulsions. It was then 7 o'clock in the morning. The accoucheur returned, and applied a mustard poultice to the nape of the neck. I have not been informed if any thing more was done. The ordinary physician was then sent for in haste. He ordered *opium*, and next *stramonium*, in globules. The convulsive paroxysms increased rapidly until a quarter past 10 o'clock, when my attendance was desired. Having ascertained the state of circumstances, and judging that the most pressing object was to counteract the effects of the excitants which had been given, I advised their most powerful antidote, *nux vomica*. This was given at the dose of one drop of the tincture. The event proved that I was right in my opinion. Under the influence of the first dose the patient rapidly became more quiet, the convulsions gradually diminished, and when I left she had already pronounced a few words. Before quitting the room I most strenuously recommended that no food whatever should be given, stating at the same time my opinion, that the patient was in so dangerous a state that the least infraction of this rule might destroy the few hopes I still entertained. From the previous symptoms, and those yet existing, I could not but consider the present crisis as a termination of the long-standing disease. The acute disease had already existed for a fortnight without being recognized; during that period not only its development had remained unchecked, but its advance had been hastened by the agency of stimulating diet. Convulsions supervening in these circumstances, led to the inference that softening of the brain had commenced. Had I still practised upon the old methods of treatment, I should have pronounced the case to be incurable, and that the termination would, inevitably, be fatal; but having other means at my disposal—means which had previously arrested incipient alteration of structure in nearly similar cases—I preserved a ray of hope. This hope, however, depended upon the circumstance that the action of the medicines should not be disturbed by any imprudence.

I had appointed to meet the other medical attendants at five o'clock. At

three I was summoned in haste, and was informed that the patient was sinking. She was, indeed, in an alarming state. I asked a few questions, and found that a cup of broth had been given, upon which a violent renewal of convulsions had ensued; and that subsequently a cup of coffee had also been administered. The pulse was now so rapid, that it could not be counted—the respiration was laboured—every sign of consciousness had disappeared, and the convulsive paroxysms returned at intervals of about two hours. I again advised the tincture of *nux vomica*, in doses of one drop. At five o'clock the pulse had regained power, and the face was flushed. I then gave one drop of *aconitum*, which was followed by much perspiration. After this I left the patient, to return again in the evening: during this interval *stramonium* and *belladonna* were administered in globules, without my advice.

At our last consultation it had been proposed, in order to avert from the homœopathic advisers the consequences of non-success, to leave the patient in the hands of allopathists. As I was consulted upon this, I declared that I would not consent to the proposal, and for the following reasons:—I asked myself, What would allopathy do for the patient? Use revulsives. What would be their effect? The state of softening of the brain could no longer be doubted. If the revulsive were placed upon the surface of the body—even admitting that it would operate, which was more than doubtful—it would only for a moment remove the determination of blood to the brain, without removing the decided lesion of structure which threatened life. If the revulsion should be directed to the digestive organs, I had proof already, from the action of the stimulants (with which it would operate in an analogous manner), that the congestion would be thereby increased. Would bleeding be preferable? I had seen blood-letting adopted in similar cases—had even in former days resorted to it myself, and had always seen the patients sink. Moreover, in the case both of blood-letting and revulsion, vitality is depressed; whereas it was now to be supported as much as possible. I felt, therefore, that the palliative action of allopathy would be

altogether powerless, and that by abandoning the patient, I should resign her to certain death, whilst with homœopathy there was still reason to entertain a hope, although that hope was feeble. A sense of duty would not allow me to make any sacrifice to my own private interests, and accordingly I pronounced my desire that she should remain under homœopathic treatment, however great the responsibility to be borne.

The same evening I prescribed *belladonna*, by drops. There occurred but two more paroxysms, of which the last took place two hours after midnight. I did not quit the patient until morning. A manifest improvement had taken place: she breathed much more freely: the pulse was at 120, deglutition quite free, and consciousness was returning, so that the patient uttered a few sentences. Until the Friday, at half-past 5 P. M., the patient's state gradually improved, although the pulse, at times, assumed too much development, which was checked by one drop of *aconitum*. The accoucheur, who had been in attendance up to that time, seeing no alarming symptom, retired at half past 7 P. M. About an hour afterwards labour-pains supervened, and the patient was delivered of a living female infant. No bad symptom occurred until our arrival, when, for a short time, a little hemorrhage took place, which was arrested by a dose of *secale cornutum*. In consequence of so great an exertion of the vital power, it was to be expected that the exhaustion would be very great; I was, therefore, not taken by surprise when it did occur. When *secale* had been administered, the pulse was at about 140; though feeble, it was perfectly distinct. A cold perspiration accompanied this state. Every person then present insisted that brandy should be given. I resisted this course by every means in my power; but my protestations not being listened to, I quitted the house, judging that my presence could no longer be of any use to the patient. The brandy was given, and ice was placed upon the abdomen, and I have since been informed that the patient expired in the course of the night.

I understand that a post-mortem examination, to which I was not called, was made by three medical men (of whom one was a perfect stranger to

homœopathy), and that induration of the *corpus callosum* and of the *dura mater*, a tumor upon that membrane, and softening of the cerebellum, had been found.

I have now given you, sir, with the most minute detail, and with the most perfect truth, all the circumstances of the case. I leave it to the opinion of your readers.

With respect to the death of Madame Malibran, I may state, that I was not in attendance upon her, but that I have been positively informed, by the members of her family, by several of her friends, and by the homœopathic physician, who was called too late, that Madame Malibran had been bled, and treated allopathically, before his arrival; and that he found her under approaching death, and could only administer a few doses of medicine.

I am, sir,
Your obedient servant,
P. CURIE, M.D.

DEAFNESS,
WITH DISEASED TONSIL AND UVULA,
AFFECTING THE VOICE IN
SINGING.
SUCCESSFULLY TREATED BY
W. THORNTON, Surgeon.
(For the London Medical Gazette.)

Miss M., a professional singer, residing in London, consulted me chiefly on account of deafness, her left ear having been affected twenty-five years in consequence of scarlet-fever. She had been under the treatment of an aurist for some months, and after undergoing blistering, leeching, syringing, stimulating ointments, and acoustic drops, usually resorted to by quacks, without deriving any benefit, the disease was neglected for fifteen years, from a dread of being made worse. The Eustachian passages being obstructed, she could not inflate them, though the hearing functions of the other ear were perfect. Upon examination, the left meatus externus, near the bottom, appeared contracted; so that the orifice would only admit the point of a probe. On touching the membrana tympana, scarcely any pain was excited, but the touch conveyed a parchy sensation. By syringing with warm water, a dull obtuse sound was produced and some hardened wax removed. The hearing of this ear was

completely lost; she could not hear my watch even when pressed on the external ear or the forehead; but the introduction of a catheter through the nostril, into the Eustachian tube, plainly demonstrated a diminished calibre of this important canal. I now attempted to catheterise the Eustachian tube, but was unable to accomplish this at the first, second, or third trials: I therefore prescribed friction of the ointment of iodide of mercury upon the external fauces, and small doses of iodide of potassium and Decoct. Sarzæ. concentrated, internally. This plan was adopted for two months, when I succeeded in passing medicated vapour douche and a bougie into the Eustachian passages. By persevering in the use of the iodine for three months, and frequently, during this time, dilating the Eustachian tube by means of the catheter or bougies, hearing was gradually restored, to the great delight of my patient, who had not enjoyed it for twenty-five years. This lady complained of an irritation in the throat when exceeding a certain note, producing a tickling and hoarseness which affected and impeded her singing.

Upon examination of the fauces I discovered the left tonsil elongated and hard to the touch; the uvula very much relaxed—sufficiently to account for the above symptoms. I applied a strong solution of alum, by means of a small camel brush, touching the tonsil every third day with caustic. The effects of this combined treatment were very satisfactory; all the symptoms disappearing, the voice permanently improving, and the patient gaining two or three notes. I have dwelt longer on this interesting case than I intended, to illustrate the importance of the “Medicated Vapour Douche” in obstructions of the Eustachian passages. I am convinced no person labouring under deafness, however protracted, should abandon the hope of relief until their ears have been skilfully explored by catheterism of these passages. Strictures of this tube are removed on the same principle as when existing in the urethra. By dilatation with bougies and medicated vapour, these canals and cavities are readily cleared out. The great difficulty of the manipulation is admitted, but still I have frequently succeeded in passing a fine whalebone or catgut bougie.

MEDICAL GAZETTE.

Friday, February 3, 1843.

“Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso.”

CICERO.

A FEW MORE WORDS ON PRISONS.

WHEN we made the late prison reports the subject of commentary about two months ago, we by no means exhausted the rich mine of information which they afford; nor need we apologize for again recurring to documents where almost every page teems with instruction for the practitioner of physie.

Captain Williams observes in his Report, that considering the increased rigour of our penal establishments, the term of imprisonment might be shortened in many of the slighter cases. The acute regret felt by the offender during the commencement of his incarceration wears off in a few months, and is succeeded by torpid indifference. He becomes an unreflecting machine, and goes through the prison routine without the exercise of a single faculty. Meantime, his health sinks, and he must be supported by extra diet, or withdrawn from hard work, in order to keep body and soul together.

On the other hand, Mr. Hill wishes confirmed offenders to be placed in confinement for life!

Captain Williams states that in several jails appropriated to the imprisonment of debtors, in execution from courts for the recovery of small debts, there is no provision for their sustenance; so that the destitute are saved from starvation by charity alone. The 52d of Geo. III. cap. 169, which empowers Justices of the Peace to order relief to prisoners confined for debt under *mesne process*, should, of course, be extended to these cases. In some of these petty jails the condition of the debtors is very pitiable

in other respects, "there being no provision either of light, fuel, bedding, medical assistance, nor the means of cleanliness; and in one prison the water is so bad as to compel the prisoners, even with their scanty means, to purchase it from without."

Apropos to debtors, a scene occurred not long since at the Debtors' Jail for the Honour of Wakefield, at Halifax, which looks as if it had been transcribed from some mediæval history, yet its actual date was 1841. Mr. Foster, a debtor, died in this jail, owing the keeper about £150 for articles furnished him during his detention. The jailer refused to give up the body—but let him tell his own story:—

"Mr. Sutcliffe came on Monday and offered me £50 to let him have the body, but I would not take it. On Wednesday I buried the body in the jail yard, about four feet deep. On Thursday a mandamus came from the Court of Queen's Bench for the delivery of the body, and they dug it up and took it out of the coffin."

Foster was confined for a debt of £32. 12s. 6d., and his expenses in jail were more than a pound a day. But the prison is attached to a public-house.

Assuredly these minikin jails ought to be abolished; a prison with only five prisoners is an ugly and unseemly toy, and a blemish to the social system which it is allowed to encumber. The conjunction, too, of a jail and a public-house is blameable beyond all names of censure; it would seem as if, by some distorted reasoning, it was thought that as drink brings many a man to jail, so a jail ought to bring him to drink again!

On the other hand, the largest prison in the kingdom is one of the best regulated; we mean the House of Correction, Cold Bath Fields. It commonly contains from a thousand to eleven hundred prisoners; the greatest number at any one time having been 1155 in 1840, and 1215 in 1841; while the number committed to it in the course of a year

is from nine to ten thousand. The punishments in the course of the year ending Michaelmas 1841, were as follows:—

Whippings:—

With birch-rod	7
With cat-o'-nine-tails . 3—	10
Irons.	122
Solitary confinement	1,936
Other punishments	16,006

18,074

Ventilation is by no means so universally attended to as it merits. Thus, in the Colchester borough jail, a prisoner in solitary confinement was in a cell nine feet by four, adjoining the privy which has been erected for the female prisoners. He had a sleeping cell of the same size, and took no exercise in the open air. The rooms, too, "on the ground and upper floor, entered into from the small prison yard, were quite unfit for the confinement of a prisoner, from the offensive state of the drains." The town council, however, were then projecting improvements, which it is to be hoped have ere this been carried into effect.

But what shall we say of the black holes of Sheffield, of those lock-ups, where prisoners are thrust into cells, unprovided with the means of cleanliness, and in the words of the inspector "muffled up in dirty straw litter?" In the House of Correction at Wakefield, prisoners, surgeon, and turnkey, alike agree as to the filthy state of these Sheffield receptacles. The last says—

"As soon as we unshackled the prisoners, I told them to go into the dark cells; there were about fifty of them. They all began to complain, particularly those who had been there before. One man asked me when he should be tried; this was on Monday morning. I told him it might be the middle or end of the week; he said, if he thought he was likely to be there till the end of the week, he would rather at once plead guilty, and be sentenced to six months. The condition of these prisoners is dreadful;

there are between twenty and thirty of them together in these cells at a time."

The unfortunate men locked up in these infectious cells often bring the itch with them from Sheffield to Wakefield; indeed, this turnkey recollects that of a batch of six who arrived thence, four had the disease.

In the Gloucester County Jail and House of Correction, the keeper observed that—

"Solitude always develops insanity in those who have been insane before; and that the treadmill brings out phthisis in those predisposed to it."

In the prison at Durham, Mr. Hill found seven convicts heavily ironed. This prison is not considered secure, and it is therefore thought necessary to put male convicts in irons.

Again, the lock-up at Chester-le-Street, in the county of Durham, is not a secure building, and consequently, says Mr. Hill, "the barbarous custom of having chains and rings to fasten prisoners to is made use of."

These points we have selected from the sixth and seventh Reports of the Inspectors of Prisons; we will now touch upon another one, which they do not mention, but which has lately been the subject of a pamphlet by Lord Western—we mean the more frequent delivery of our jails*.

At present, assizes are held but twice a year, and the interval between the midsummer and spring assizes is so long that a prisoner may have to endure a longer incarceration before his trial, than he would be sentenced to, if convicted. This injustice occurs on a very large scale; for Lord Western found that 405 persons, who were tried at the Spring Assizes, had been in prison before the first of October, "*while eight hundred persons convicted of felony,*

suffered under their sentence a lighter punishment than the four hundred and five experienced before trial."

Hence, in many instances, the length of punishment depends more on the course of the seasons than on the blackness of the offence.

Or, take a milder case, but still a very bad one. Two men are thrown into the County Jail, and after lying there five months are brought to trial. One is convicted, the other acquitted. The court, in passing sentence on the former, tell him that in consequence of the time he has passed in jail, he is condemned to only one month's farther imprisonment. So that the innocent man has suffered five-sixths of the punishment inflicted on the guilty one!

Lord Western informs us, in addition, that a statute of Edward the Third distinctly directs that jails should be delivered at least three times in the year, and more often, if need be. When Lord Western made a speech on this subject in 1819, the Attorney-General and he differed on the interpretation of this statute; but it is of little importance which was in the right. It is obviously so wrong that a prisoner, whether innocent or guilty, should lie in jail six or seven months before his trial comes on, that we hardly want the authority of the fourteenth century to back our common sense. It is true that, as this statute is unrepealed, it might still be revived; but this is scarcely to be expected, especially as its interpretation is somewhat doubtful: the hoped-for improvement must proceed from a new law.

This is one of those reforms which have only to be frequently discussed in order to be speedily carried. As our judges are no longer limited to the mystic number of twelve, no one would object to an addition for the further

* Facts and arguments in favour of a more frequent delivery of the Gaols, by Lord Western. London, 1842.

ance of justice; since every one will agree in the truth of the axiom which Lord Western quotes from Coke:—

“Dilatio justitiæ est quædam negatio.”

ROYAL MEDICAL & CHIRURGICAL SOCIETY.

January 24th, 1843.

THE PRESIDENT IN THE CHAIR.

On Congestive Pneumonia, consequent upon Surgical Operations, Diseases, and Injuries. By JOHN E. ERICHSEN, Esq.

THE object of the writer is to show, that in the diseases and injuries usually coming under the care of the surgeon, and in operations generally, a form of inflammation of the lungs characterised by its asthenic nature, and different from that dependent on the absorption of pus, is a frequent attendant. The kind of inflammation to which he adverts is distinct from active idiopathic pneumonia, and resembles more nearly that condition of the lungs stated by some authors to be frequently found in typhus fever and other diseases attended by much debility of the system. While possessing several characters distinct from those of passive congestion, produced by mere mechanical causes, “congestive pneumonia” is especially marked by an engorged and condensed condition of considerable portion, and that most frequently the inferior and posterior part of these organs. The blood, the author says, under the influence of depressing causes, and chiefly attributed by him to confinement in the recumbent position in the impure atmosphere of an hospital or sick room, and to the irritative fever consequent on wounds or profuse discharges, stagnates in the lungs: a degree of irritation is consequently set up, and inflammation of a passive type is excited. In the first stage, the affected parts are of a livid, violet, or purple mottled colour, heavy, compact, but friable, readily breaking down into a grumous pulp, and scarcely crepitating when pressed upon, but exuding a very considerable quantity of thin, spumous, frothy fluid. In the second stage the tissue of the organ is more dense, but still very friable; it does not crepitate, but sinks in water, and when cut into, the sides of the incision present a smooth uniform black aspect, to be attributed to a highly gorged state of the capillary network of the lungs compressing the air cells, which are either empty, or contain at most a thin serous fluid. In order to establish his proposition, that this kind of pneumonia is prevalent in cases of surgical complaints of the miscellaneous description implied by the title of his paper, he presents a Table containing a record of 62 post-mortem examinations of the lungs, in patients

who had been treated in the surgical wards of a public hospital. The list was made without selection, and is composed of a series of diseases, injuries, and operations of the varied nature, as to kind, duration, and fatal character, usually met with together in an Hospital. Burns, which are a special kind of injury, are not included in it: nor are the symptoms of the patients during life, or the morbid appearances found in other organs besides the lungs.

He arranges the cases into four classes, and finds, first, that of those in which the presence of pneumonia was evinced by the diseased condition being confined to one lung, by its having advanced to solidification, or by its being combined with inflammation of the pleuræ, or bronchial mucous membrane: there are 28 cases, or nearly one half of the total number. Secondly, that of doubtful cases; in which the lungs presented the characters common to the first stage of pneumonia, and to passive congestion, without there being collateral signs to establish the diagnosis: there are 11. Thirdly, that of cases in which the lungs were diseased, but not inflamed or congested: there are nine. Lastly, that of cases in which the lungs were found perfectly healthy: there are 14. He further states, that of the 28 cases included in the first class, the pneumonia had advanced, in 17, to the second stage of hepatization. Besides making additional comments on the table, the author enters at some length into observations on the condition of the system which may be supposed to render patients affected with surgical disorders, or who have submitted to operations generally, peculiarly liable to congestive pneumonia: and he concludes by pointing out its insidious origin and progress, and the consequent care which requires to be taken to observe its accession and guard against its effects.

CLINICAL NOTES,

By J. ADAIR LAWRIE, M.D.

Professor of Surgery, Anderson's University, Glasgow.

[Continued from p. 639.]

CASE VI.—*Popliteal Aneurism.—Operation.—Cure.*

November, 1840.—Robert Becket, aged 31, flesher; unmarried; dark complexion; looks in good health; dissipated. In right popliteal space, immediately behind the knee, there is a tumor about the size of a hen's egg, soft, pulsating throughout, communicating through the stethoscope a very strong soufflet synchronous with the beat of the arteries, and to the fingers, on firm pressure, (which greatly reduces its size,) a grating, or rubbing sensation. Pulsation in femoral artery normal; that of tibial cannot be felt,

probably in consequence of considerable œdematous swelling of the leg and foot; some fulness of superficial veins; no pain in the tumor, but rheumatic pains in knee. General health good.

Two months ago, after a fall in a field, felt acute pain in right ham, and several days afterwards first observed a small tumor in that situation, which has since slowly increased; has been liable to rheumatic pains for two years.

24th.—A consultation having unanimously recommended operation, the femoral artery was tied to-day, about a hand's breadth below Poupart's ligament. The vessel lay rather deep, but the operation was accomplished with perfect facility, and with the loss of not more than half an ounce of blood. Both ends of the ligature were allowed to remain, and were brought by a needle through the integuments on the outer side of the wound; edges approximated by two stitches, and adhesive plaster; limb, half an hour after the operation, has not fallen in temperature. Complained a good deal of pain during the operation, and on tying the ligature, referred to the knee, and still continuing. Pulse and temperature natural. Limb has been wrapped in warm flannel.

Hab. Stat. Opii. Mollis gr. ij. perstant dolore repetenda.

25th.—Pain in hip, knee, and heel, with restlessness, became so severe that he has had ten grains of opium without sleep. At present pain quite gone. Pulse 84. In every other respect quite well. The temperature of the leg has never fallen; foot and toes cool, but not cold.

The ligature was found loose in the wound on the 15th day. The wound healed kindly. No untoward symptom occurred except a continuance of the pain in the heel, with numbness. The tumor diminished, and became moveable, but did not disappear.

CASE VII.—*Popliteal Aneurism — Operation.—Cure.*

Occurred in the hospital practice of the late Dr. Auchincloss, from whose journal I abridge it.

James Cullen, sailor, admitted September 30, 1837. About two months since, without any obvious cause, experienced an unnatural feeling of stiffness in the left ham, which was soon afterwards followed by a hard swelling about the size of the finger point. The swelling has gradually increased, without pain or uneasiness, except stiffness in walking. On admission, it is nearly as large as the fist, and pulsates firmly and distinctly. Integuments sound. General health good.

October 8.—On the 4th instant, femoral artery secured by ligature at lower part of upper third of thigh. No bad symptom. Tumor diminished in size, and has not pul-

sated since operation; posterior tibial felt opposite to malleolus.

23rd.—Ligature came away on the 16th day from the operation. Erysipelatous redness appeared around the wound, which ended in an abscess, discharging a considerable amount of pus.

November 22nd.—Discharge from abscess gone; wound healed. Dismissed cured.

It is hardly necessary to offer any remarks on an operation so frequently performed as ligature of the femoral artery. The time for its performance in popliteal aneurism is early—as soon, indeed, as the increasing size of the swelling removes all hope of a spontaneous cure. I feel confident that correct statistics will shew, that the smaller the tumor, *ceteris paribus*, the greater the success after operation. There is much more of loss than of gain in delay, founded on what I have always considered the vain hope, that a large swelling, by impeding the direct, augments the anastomosing circulation.

The point at which I prefer tying the artery is the junction of the upper with the middle third of the thigh. No doubt the artery here is deeper and more closely connected with the vein than in what is called the superficial femoral; but the risk of hæmorrhage from the wound of the operation is so great, when the femoral is tied near the profunda, as to forbid that part of the vessel being selected for operation, unless in cases of absolute necessity. I am not aware that hæmorrhage so certainly follows ligature immediately *below* as immediately *above* the profunda; but the cases in which it has occurred are sufficiently numerous to shew that it is a risk which ought not to be incurred.

The directions for its performance are, a free external incision, and care in passing the needle round the artery. This last stage of the operation is the only one of difficulty or danger. The artery should be gently separated from the vein at its inner edge, the needle passed from within outwards, no force used, and when the point of the needle shews itself on the outer edge of the artery, care should be taken to ascertain that it is not carrying a fold of the vein before it. It is at this last stage that, I believe, the vein is wounded. It was at this period that venous blood flowed in Ballantine's case. If the vein be thus entangled the needle should be withdrawn, the outer edge of the artery gently dissected, and the needle re-introduced as before. Two common knots should be tied, and both ends of the ligature left; and the wound dressed with two stitches, and adhesive plaster between and on either side. No compress or bandage is admissible. The limb should be laid on its outside, and wrapped in warm flannel. Pain is very generally complained of, which is best allayed by full doses of opium.

II.—TRAUMATIC ANEURISM.

No.	Sex.	Age.	Occupation.	Cause.	Vessel injured.	Vessel tied.	Result.	Remarks, &c.
18	Male	50	Old soldier	Ulcer at angle of jaw. V. S.	External carotid?	Common carotid	Cured	Hæmorrhage from original wound 45 days after the operation; restrained by pressure. Ligature came away on seventh day.
19	Ditto	25	Carrier		Brachial	Brachial; Hunterian operation	Ditto	
20	Female	20	Spinner	Ditto	Ditto	Brachial; old operation	Ditto	Attempt at cure with button forceps.
21	Ditto	33	Weaver	Ditto	Ditto	Brachial; Hunterian operation	Ditto	Circumscribed; ligature came off on 13th day.
22	Ditto	28	Servant	Ditto	Ditto	Brachial; Hunterian operation.	Died	Erysipelas and abscess of arm; sac opened & discharged pus and clots; ligature came off on 14th day.
23	Male	30	Labourer	Severely lacerated wound of arm V. S.	Ditto	Axillary; amputation	Cured	Sloughing and hæmorrhage from sac; amputation at shoulder-joint.
24	Ditto	40	Ditto		Ditto	Brachial; Hunterian operation.	Cured	Hæmorrhage from wound of operation on 20th day; fresh ligature.

The above table consists of 7 cases, of which one was in the carotid and six in the brachial. Of the latter, five followed venesection, and one an injury. Six recovered, and one died; but in one the patient was saved by amputation. The success of the operations is, therefore, as two to five.

The case of the carotid occurred a good many years ago, under Dr. Perry, who was then surgeon to the hospital, and with whose permission I give the following abridged details. (*Vide* Glasgow Medical Journal, Vol. IV.)

CASE VIII.—Peter M^rArthur, æt. 39, admitted 14th November, 1820. Two years ago a small painful swelling appeared behind the angle of the jaw on the right side, which suppurated, was punctured, discharged matter, and afterwards degenerated into an extensive ulcer. Behind this ulcer a pulsating tumor shewed itself, which, in the course of twelve months, gave way five times, and on each occasion discharged a considerable quantity of arterial blood.

He was admitted a few hours after the last of these bleedings, in a state of nearly perfect collapse, and as soon as the operation could with safety be undertaken, the common carotid was tied. The ligature separated on the 13th day, and everything went on favourably till the 29th of December, 45 days after the operation, when profuse bleeding took place from the original spot, through the ulcer at the angle of the jaw. The lowest diet, rest, and firm pressure, were prescribed with success. The hæmorrhage did not recur, and he left the house January 24th, 1821, cured.

This man is still alive. There has been no return of disease in his neck.

Traumatic aneurism generally shews itself in one of two forms, the circumscribed and the diffused. I shall offer a few remarks on the kind of operation required in these two species.

What kind of operation ought to be performed in *circumscribed* traumatic aneurism?

I am surprised to find that the reply to this question, as given by several surgical authorities, as Professor Syme, and, I believe, Mr. Liston, and others, is in favour of the old operation of opening the sac and tying the vessel above and below the wound. With all due deference, I consider this recommendation as a retrograde step in the treatment of aneurism, and one which ought not to be acted on, unless in exceptions of rare occurrence. I do not know one well-founded argument in its favour, whereas those against it are numerous and obvious. It is more difficult of performance, more painful, more dangerous, and less likely to be successful. The difference between a compound wound of an artery (if I may use the expression) and a simple one, is as great as between a com-

pound and a simple fracture. We are every day becoming more and more alive to the great advantages of entire and uninjured integument, and in no lesion is sound skin of greater importance than in injuries of arteries. When the injury is compound, (or, as it is usually called, the artery wounded), immediate death, or very serious hemorrhage, is most securely prevented by exposing the injured point, and applying two ligatures. When it is simple, either originally, or in consequence of the wound having healed, there is no immediate danger, and the Hunterian operation with one ligature constitutes the proper treatment. This opinion does not rest on theory, but on many successful operations. There are few, perhaps, who would lay open the sac and tie the injured vessel in those cases in which the integument had not been wounded; but as *I know* that this is not the universal opinion, I may quote the following among several cases.

CASE IX.—*Traumatic aneurism of posterior tibial at the ankle.—Hunterian operation.—Cure.*

James Robertson, æt. 40, labourer, December 24th, 1839, fell from a height of ten feet, on his feet, and severely injured both ankles. He was confined to bed, and the usual remedies applied.

January 12th, (19 days after the accident) a pulsatory swelling was discovered in the course of the right posterior tibial, near the ankle.

15th.—The posterior tibial was tied, about three inches above the malleolus.

24th.—The ligature came away, the wound healed readily, the swelling disappeared, and the cure was complete.

CASE X.—*Traumatic Aneurism from bleeding at the bend of the arm.—Hunterian operation.—Cure.*

George Nesbitt, æt. 35, handloom-weaver, June 1838 : was bled at the bend of the arm three months ago, and had the brachial artery wounded. A tumor the size of a pigeon's egg has since gradually formed, possessing all the characters of aneurism. The brachial was tied in the usual way, about three inches above the elbow. Within an hour after the operation pulsation was perceptible in the radial at the wrist, but not in the tumor. In ten days the ligature came away, and the wound healed readily. I heard from this man to-day. The swelling has long since disappeared, and the limb is as strong as its fellow.

In five of the six cases of traumatic brachial aneurism in the table, the Hunterian operation was performed. In four, as far as hemorrhage is concerned, successfully; in the fifth, the bleeding returned, but not from the original wound. Amputation at the shoulder-

joint was deemed necessary, and the man recovered. It may be as well to give the particulars of this last case, to shew that it does not militate against the kind of operation I am advocating. It occurred in the hospital practice of the late Dr. Auchincloss.

[To be continued.]

ON THE
OPERATION OF CALOMEL.

[An extensive series of Experiments on the Operation of Calomel have recently been performed by Mr. MURRAY, from which he draws the subjoined conclusions.]

1st. When administered to dogs in doses of from five to thirty grains, calomel occasions, in a less or greater degree, a preternatural afflux of blood to the minute arteries and capillaries of the gastro-intestinal (more particularly the gastric and colic) mucous membrane, imparting to that tissue a capilliform, punctiform, or uniform red tinge. This increased vascularity, which is slightly marked after doses of five and ten grains (Experiments xii. xiii. and xiv.) becomes more perceptible in doses of twenty and thirty grains, and is accompanied with more or less sanguineous effusion on the mucous surface, either in dots (like bleeding points) or in small streaks or patches (Experiments v. xi.)

3d. In the above-mentioned doses it increases the flow of bile into the duodenum; and

3d. It increases the secretion from the intestinal mucous follicles and serous exhalants.

4th. When administered in doses of one, two, and three drachms, it produces, in addition to a greater amount of the preceding effects, capilliform injection of the peritoneal coat of the stomach and bowels, and alters, as well as increases, their internal secretions, occasioning a sanguineous, or dark grumous, or sanious, or sero-albuminous effusion on the inner surface of the bowels, particularly of the colon. (Experiments ii. iv. vii. xv. vi. ix.) In one experiment (ix.) all these different kinds of secretion (resembling the appearances of acute dysentery) were found in the small intestines of the same dog, and must have been of recent formation, as they had not passed into the colon. Under the influence of these doses, also, bile flows into the cavity of the stomach.

These results appear to me conclusively to establish, that calomel excites and increases (and, under certain circumstances, modifies) the physiological actions of the minute arteries, capillaries, and secretory vessels of the gastro-enteric mucous membrane; and that these effects are in some degree proportioned to the largeness of the dose administered.

The apparent discrepancy between the results of these experiments and those obtained on a more limited scale by Mr. Annesley in regard to the stimulant or sedative action of calomel on the capillary blood vessels of the gastric mucous membrane (for there is an exact correspondence of result regarding its action on the colon) appears to be partly attributable to that author's having inferred, from two experiments, that the natural and healthy state of the stomach and bowels is that of high vascularity—an opinion which is opposed, I believe, to that of almost all anatomists, and is directly at variance with Experiments i. iii. and viii. The discrepancy in reference to its operation on the intestinal mucous secretion is perhaps more a difference of interpretation than any real discrepancy of results; Mr. Annesley having attributed to calomel the property of chemically dissolving and detaching the mucus from the surface to which it adheres, while I have seen reason to believe that it stimulates the mucous and serous exhalants to a preternatural increase of their secretion, which combines with, and dilutes, the inspissated mucus previously lodged in the bowels.

I will not venture to draw any therapeutic deductions from these experiments, further than to express my belief that they will be found not opposed to clinical observations. Admitting the direct stimulant or irritant operation of calomel on the healthy gastro-enteric mucous capillaries to have been established, it by no means follows that this remedy should not exert an antiphlogistic or contra-stimulant action on these vessels when preternaturally dilated and distended by disease. On the contrary, such a therapeutic effect would be accordant with the analogous operation of other remedies, and would admit of a satisfactory explanation. To say nothing of the indirect antiphlogistic effect resulting from an increase of the different abdominal secretions, calomel may be supposed to aid in re-establishing the healthy contractility of the distended capillaries, whereby their diameters will be lessened and their morbid vascularity reduced—an effect which will be greatly facilitated by combination with such remedies as directly allay the nervous irritability of the affected tissues.

If it be asked what practical benefit can result from the discussion of the theory of the direct and primary operation of calomel, provided its ultimate agency in subduing inflammatory action in the mucous membrane of the stomach and bowels be admitted—it may be answered, that, as mercury sometimes removes, sometimes aggravates, these morbid affections, a knowledge of its mode of operation might enable us to reconcile these discrepancies, and thus give greater precision to its administration. A single

illustration will shew its bearing on medical practice.

If calomel in large doses (as contended for by Mr. Annesley) possess a direct sedative effect on the gastric capillaries, or if (in the words of Dr. Copland) it directly, “diminishes vascular action in the villous coat of the stomach,” it follows, that, in all cases of inflammation, or of simple increased vascular action, in that tissue, large doses of this medicine must always be productive of more or less benefit, and cannot possibly be prejudicial:—but if, on the other hand, its physiological effect be to excite or increase arterial and capillary action, it is probable that the more acute forms, or the earlier stages, of the affections referred to, would be aggravated, rather than benefited, by large doses of calomel, until the gastric capillaries should be previously depleted, and perhaps their increased action in some measure subdued. With these few observations I dismiss the subject, in the hope that it may engage the attention of other members of the Society, possessing better opportunities and qualifications for carrying it out. The subject is one of high importance to practical medicine; and its further prosecution might, at the same time, tend to throw some light on the obscure and disputed subject of the theory of inflammation. The few and imperfect experiments now submitted to the society, in conjunction with clinical experience, tend to favour the doctrine recently advocated by Dr. Carswell, that inflammation presents two successive stages, each of which is referrible to opposite conditions of the physiological properties of the affected tissue.

It need scarcely be added, in conclusion, that these experiments are not calculated to throw any light on the remote agency of mercury in controlling disease in organs and tissues with which it does not come into immediate contact.—(*Transactions of Medical Society of Bombay.*)

FOREIGN BODY IN THE ŒSOPHAGUS SEVENTEEN YEARS.

A HIGHLY intelligent young lady of this city, whose health has always been delicate, on rising in the morning about two years since, coughed slightly and hawked some hard substance into her mouth. On removing a small quantity of mucus, with which it had been ejected, it was discovered to be a small green glass ear-drop. Her mother collected distinctly, that a pair of earrings, with green glass drops, had been presented by a relative, seventeen years previously, and that shortly afterwards, she had

complained of having swallowed one of them; but as she felt no inconvenience, no notice was taken of it. The intelligence and veracity of the lady are such as place the facts as related beyond all doubt. The ear-drop, too, is evidently a very old-fashioned affair, such as is not now to be found in any jeweller's shop.—*Philadelphia Medical Examiner.*

NOTE BY MR. WALNE ON HIS

CASE OF OVARIAN OPERATION,

Published in the *MEDICAL GAZETTE* Dec. 23, 1842.

(For the *Medical Gazette*.)

THE ligatures of the pedicle, which had not come away when the paper went to press, remaining with very little change of position, and being in vain pulled at every other day, on the 6th of January were twisted gently into the form of a cord till resistance was felt, and slight pain excited. They were then fixed in their twisted state by plaster. This proceeding was renewed on the 8th; and on the 10th of January, about ten weeks after the operation, they were drawn out without pain or resistance. In a few days the canal they had occupied closed, and the patient's cure was perfected.

I was not aware at the time of drawing up the particulars of my own case, that the operation had been performed by Dr. Granville. It appears, however, that that gentleman operated unsuccessfully in 1827, and that he had attempted a similar operation in the previous year, but, on finding extensive adhesions, desisted by the advice of those about him. No professional account of the completed operation was ever published. Of the other I find a brief notice in a medical journal of the period.

Guilford Street, Russell Square,
Jan. 30, 1843.

HOMŒOPATHY.

To the Editor of the *Medical Gazette*.

SIR,

In contradiction to the letter of an "Homœopathic Physician," contained in your last number, I beg distinctly to state that Mr. Barnes was not the medical attendant of Lady Denbigh in her former accouchements, and that in her last confinement her treatment was limited to homœopathic remedies.—I am, sir,

Your obedient servant,

M.D.

ROYAL COLLEGE OF SURGEONS.

LIST OF GENTLEMEN ADMITTED MEMBERS.

Friday January 27, 1843.

C. Withington.—W. J. Preston.—T. W. Benfield.—A. Cartwright.—S. Byles.—J. Prowse.—S. Singleton.—T. Young.—J. R. Lewer.—T. Spencer.—D. Coulter.—C. H. Perry.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

Thursday, January 12, 1843.

G. Senior, Wincanton, Somerset.—J. Carey, Dublin.—J. Rowlands, Carmarthen.—C. Shorten, Bury, Suffolk.—E. Haddock, Dudley.

A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, January 21, 1843.

Small Pox	11
Measles	31
Scarlatina	30
Whooping Cough	38
Croup	5
Thrush	1
Diarrhœa	2
Dysentery	3
Cholera	0
Influenza	1
Typhus	27
Erysipelas	4
Syphilis	0
Hydrophobia	0
Diseases of the Brain, Nerves, and Senses ..	175
Diseases of the Lungs and other Organs of Respiration	305
Diseases of the Heart and Blood-vessels ..	28
Diseases of the Stomach, Liver, and other Organs of Digestion	69
Diseases of the Kidneys, &c.....	6
Childbed	8
Ovarian Dropsy	1
Disease of Uterus, &c.	3
Rheumatism	7
Diseases of Joints, &c.	1
Ulcer	0
Fistula	0
Diseases of Skin, &c.	0
Diseases of Uncertain Seat	92
Old Age or Natural Decay.....	87
Deaths by Violence, Privation, or Intemperance	23
Causes not specified	2

Deaths from all Causes

960

METEOROLOGICAL JOURNAL.

Jan. 1843.	THERMOMETER.		BAROMETER.	
Wednesday 25	from 40 to 48		29.91 to 29.98	
Thursday 26	40 50		29.93 29.98	
Friday 27	46 54		29.91 29.84	
Saturday 28	49 56		29.72 29.80	
Sunday 29	47 54		29.87 29.80	
Monday 30	48 55		29.68 29.80	
Tuesday 31	34 50		29.86 29.80	

Wind, S.W. and S. Except the 30th, generally cloudy.

CHARLES HENRY ADAMS.

WILSON & OOLVY, 57, Skinner Street, London.

THE
LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, FEBRUARY 10, 1843.

LECTURES
ON THE
THEORY AND PRACTICE OF
MIDWIFERY,

*Delivered in the Theatre of St. George's
Hospital,*

BY ROBERT LEE, M.D. F.R.S.

LECTURE XV.

*On the Diagnostic Symptoms of Pregnancy,
and on the best method of ascertaining
the Existence of Pregnancy when con-
cealed, complicated, or feigned.*

IN describing the growth and enlargement of the uterus during pregnancy, I observed that cessation of the catamenia, sense of fulness, weight, or uneasiness in the region of the uterus and bladder, irritability of the stomach and of the whole nervous and vascular systems, are the most common symptoms of early pregnancy. Though the uterus, at the end of the second month, be nearly twice as large as in the unimpregnated state, its fundus cannot be felt in the hypogastrium, and, except a little fulness and softness, there is no change in the orifice and cervix. In the third month, the lips of the os uteri are thick and soft, and the finger can be introduced a little way within them, and the Nabothian glands felt enlarged. The neck of the uterus is also thicker, softer, and more elastic, than before conception. The fundus uteri can sometimes be distinctly perceived above the brim of the pelvis at the end of the third month, but more frequently it cannot before the end of the fourth. About twelve weeks from the period of impregnation, the circulation of the blood in the walls of the uterus can occasionally be heard; but the pulsations of the foetal heart are seldom perceptible before the fifth month. The body of the uterus, after the middle period of pregnancy, continues to enlarge till the end of the ninth

month; while its cervix is gradually becoming shorter, and the orifice thicker and softer. The umbilicus protrudes, and white lines are seen on the sides of the abdomen. Not only can the sound of the foetal heart, and the pulsations of the uterine blood-vessels, be distinctly heard during the latter months, but the movements of the foetus can be felt by applying the hand over the uterus. The areolæ become broad and dark, and the glands around the nipples enlarged, and milk is often secreted.

In some women conception is immediately followed by nausea and vomiting in the morning, or dislike to food which they had previously relished. In many this irritability of the stomach on rising in the morning is not observed till a month or six weeks have elapsed, and then it occurs in a severe form, and continues nearly the whole of the day, and a great part of the food taken is rejected by vomiting. The morning sickness usually disappears, or becomes less distressing, about the middle period of pregnancy, but in some it continues till the time of delivery. Some women never experience any uneasiness from nausea and sickness in the morning at any period of pregnancy, and others suffer only from cardialgia and other symptoms of dyspepsia. This sympathetic affection of the stomach has been repeatedly described to me as different from sea-sickness and nausea, and vomiting produced by every other cause. Many women also experience during the first two or three months, or for a much longer period after conception, sympathetic disturbance of the brain, indicated by headache, flushing of the countenance, drowsiness during the day, disturbed sleep, and frightful dreams at night, unusual irritability of temper, toothache, and other painful nervous affections, and all the forms of hysteria. The features usually become pale and thin, and the general aspect of the countenance changed. It is necessary, however, always to remember, when investigating cases of concealed, complicated,

and feigned pregnancy, and the diseases which resemble it, that all these symptoms may be observed when pregnancy does not exist. Suppression of the catamenia is the occurrence by which the greater number of women first know that they are pregnant; but this also may take place without pregnancy. I believe, from the anatomy of the gravid uterus and other circumstances, that regular menstruation never takes place during pregnancy; but many of the best writers on midwifery are of a different opinion, and relate cases in which, from the quantity and appearance of the fluid discharged periodically from the gravid uterus, they considered menstruation to have repeatedly occurred during pregnancy. I have seen a considerable number of women who have stated that they always continued to menstruate for several months after conception, but I had no means of verifying their statements by comparing the fluid discharged with the catamenial fluid. It is best, for practical purposes, to admit that periodical discharges take place occasionally, though not frequently, from the gravid uterus, like menstruation, and that we have no opportunity of proving that they differ. Dr. Heberden has related at least one case of what he believed to be menstruation during pregnancy. Daventer gives the history of a woman who violated the established laws of nature by never menstruating except during pregnancy. Dewees and Baudelocque have recorded similar cases; and Dr. Evory Kennedy, if I recollect right, states that he has met with two individuals who, if their own statements could be credited, were similarly circumstanced. "We must not conclude," observes Dr. Blundell, "that a woman is not pregnant merely because she menstruates; for although doubts may be raised respecting the continuance of the catamenia during the whole of gestation, yet I have repeatedly met with cases of pregnancy in which the catamenia have continued to flow during the first two or three months. Indeed, this, notwithstanding Dr. Denan's assertion to the contrary, may, I think, be looked upon as by no means very uncommon." "We have met with several instances of menstruation occurring once after conception," observes Dr. Montgomery, "and at this moment we are in attendance on two ladies, to both of whom it happened; and one of them, who has borne three children, and is now a fourth time pregnant, assured us that she always knew when she had become with child by the unusual profuseness of the next period." This is distinctly taken notice of by Johnson, who says, "Some have the menstrua copiously at the first period." A diminution of the quantity under similar circumstances has, however, been more frequently observed. "I have seen," says

Desormeaux, "some cases in which the appearance of the menses in small quantity, and at an unusual time, was almost a certain sign of conception." A similar remark is made by Puzos, Stein, and Gardien. These are merely a few exceptions to the general rule, that menstruation disappears entirely after conception.

The hypogastrium begins to enlarge in some women at the end of the second month, and the fundus uteri can be felt above the brim of the pelvis in the course of the third month. Much more frequently the fundus cannot be distinctly felt in the hypogastrium till the middle period of pregnancy, when the movements of the foetus are first felt by the mother, or quickening takes place. In a few instances, these movements, at first feeble and indistinct, have been perceived as early as the middle of the fourth month, or even before this time. As gestation advances they become gradually stronger, and can be felt when the hand is applied over the abdomen, or even seen through the parietes. Some women are unable to fix the time of quickening; in others it occurs suddenly, and is accompanied with faintness and hysterical symptoms. Quickening does not arise from the communication of life to the foetus at the moment, nor from the gravid uterus suddenly rising out of the pelvis, or from the removal of pressure from the iliac vessels. It is most probably produced solely by the movements of the foetus itself, and occurs as soon as the lower extremities are sufficiently developed to enable them to strike against the walls of the uterus with sufficient force to be felt by the mother. In the latter months, one of the best means which can be employed for the detection of pregnancy when concealed is to press firmly, and for some time, the points of the fingers against the opposite sides of the uterus, which occasions uneasiness to the foetus, and makes it move briskly. The same effect is produced occasionally by the stethoscope pressed against the uterus, and the movements are distinctly felt before the pulsations of the uterine blood-vessels or foetal heart have been heard.

In 1822, M. Kergaradec published a memoir on auscultation, in which he stated that if the naked ear, or with the stethoscope interposed, be applied to the abdomen of a pregnant woman, provided the pregnancy be at a sufficiently advanced stage, in almost every instance we can observe, at some part of the uterus, a peculiar sound, bearing more or less resemblance to that emitted by the action of bellows, and which he termed the placental souffle, from the circumstance of his having observed it at that part of the outer wall of the uterus corresponding, as he believed, to the spot where the placenta was attached internally.

It is now quite certain, that this sound, which can be heard in a large proportion of cases during the last five months of pregnancy, and sometimes as early as the end of the third month, depends upon the circulation of the blood in the arteries and veins distributed through the walls of the gravid uterus, and can often be distinctly perceived at a distance from the part where the placenta is adhering to the inner surface. It resembles sometimes the blowing of air, the continuous murmur of the sea, the sound emitted by the action of bellows, or rather a peculiar rasping sound. It has been described by Dr. Kennedy as resembling in some cases the cooing of a dove, the drone of a bag-pipe, or the deep sound produced by the vibration of the strings of a violin. It is more a rasping sound than the sound of bellows or any thing else. It is always synchronous with the mother's pulse, and can be heard over a greater extent of the surface of the uterus than what is occupied by the placenta within. It is heard sometimes in the course of the linea alba, but more frequently on the sides of the abdomen, between the umbilicus and ilium. From hearing this placental soufflé, uterine sound, or uterine pulse, as I have been accustomed to call it, and still oftener from hearing the foetal heart, I have repeatedly ascertained the existence of pregnancy at once, almost the instant the stethoscope has touched the abdomen, where women have been in the act of declaring that pregnancy was impossible. But there are some cases where this sound is indistinct, or where it cannot be heard at all, though the patient be placed upon the back, with the knees drawn up, and nothing covering the abdomen but the shift, and no noise in the apartment to interfere with the auscultation, and the instrument be employed in the most proper manner. In some cases I have not succeeded in hearing the uterine sound, when I could distinctly feel the fœtus kicking against the end of the stethoscope. This cannot be attributed justly to a want of experience in the employment of auscultation, for it occurred on two occasions both to Dr. Hope and myself, in the lying-in ward of the St. Marylebone Infirmary, where there was no noise around us. It is necessary also to be aware that this sound may be heard in the abdomen of some women who have ovarian cysts and tumors of the uterus, and who are not pregnant. On the 20th Sept. 1839, in St. George's Hospital, a sound corresponding with the pulse of the patient, and exactly resembling the placental soufflé, was heard between the umbilicus and ilium in a case of ovarian cysts with fluctuation. I requested Dr. Hope to examine the patient with the stethoscope, and he heard the sound distinctly, and informed me that he

had related similar cases in the second edition of his work on Diseases of the Heart. Dr. Montgomery relates a case of large fibrous tumor of the uterus, in which this sound was distinctly heard, and another in which the spleen was supposed to be enlarged, and in which this sound was distinctly audible. "It is unnecessary to mention," observes Dr. E. Kennedy, "to those unacquainted with the stethoscope, that they may be deceived by other sounds, either from their resemblance to the placental soufflé, or the effect they have in concealing this. The respiratory murmur is sometimes conducted from the lungs along the thoracic to the abdominal parietes, and may embarrass, but can scarcely deceive us, particularly if we be acquainted with, or prepared to expect it. The sonorous rale resembles somewhat the placental sound; and this I have frequently met with, conducted over the abdomen in the same way as the respiratory murmur. We can invariably discriminate this by its corresponding in frequency with the respiration, as calculated by the heaving of the chest, whilst the placental sound is synchronous with the pulse at the wrist; or, in other words, we ought, generally speaking, to count three placental for one respiratory or sonorous rale." The practical inference from all these observations is, that the placental soufflé cannot be regarded as an infallible test of pregnancy, as the sound of the foetal heart undoubtedly is whenever it is distinctly heard.

Dr. Mayor, of Geneva, in 1818, first heard the pulsations of the foetal heart through the uterine and abdominal parietes, by applying the ear to the abdomen of a woman far advanced in pregnancy. "Here, however," Dr. Kennedy observes, p. 59, "his discovery stopped; nor did he seem to have been aware of the extent of benefit from a knowledge of this important fact; so at least we have a right to infer from his neglecting to pursue it further." The pulsations of the foetal heart are clear, rapid and double, like the pulsation of the heart in new-born children, varying generally from 130 to 150 in the minute, and not influenced by the heart of the mother. If the fœtus be alive, and the uterine region be explored with sufficient care, these pulsations of the heart can generally be detected on the sides of the uterus, and when heard clearly, they are so peculiar and striking, that they cannot possibly be mistaken, by any one who has a knowledge of auscultation, for any other sound, and leave no doubt about the existence of pregnancy. The morning sickness, suppression of the catamenia, the placental murmur, and all the other signs of pregnancy now described, may mislead us, but it is impossible, if we come properly prepared for the investigation, to mistake the sound of the foetal heart, and if

it be distinctly heard, the existence of pregnancy is established. But it must be admitted, although I am not prepared to explain the cause, that a few cases have occurred in which the pulsations of the foetal heart could not be heard, or at least could not for a time be heard, though the uterus contained a living foetus of six or even seven months. Where the foetus is dead, the diagnosis of pregnancy, which is then so difficult, receives no aid from auscultation, and in all cases of doubtful pregnancy, unless you have devoted the greatest attention to obstetric auscultation, and even then to prevent the possibility of error, internal exploration of the uterus should never be omitted. If the lips of the os uteri are smooth and hard, and the cervix is neither shortened nor the body enlarged, it is certain, whatever the symptoms may be, that pregnancy does not exist; it is of no consequence how closely they may have resembled the ordinary signs of pregnancy, the uterus is in the unimpregnated state. If, on the contrary, the lips are thick and soft, and the cervix shortened or obliterated, and the body of the uterus enlarged, and the passive movements or ballottement of the foetus in the liquor amnii are distinctly felt when the finger is pushed against the anterior part of the cervix, pregnancy undoubtedly exists, whatever assertion be made to the contrary, and whether the foetus be alive or dead. The left side, with the knees drawn up, is the best position for making this exploration; better upon the whole than the standing posture with the back resting against the wall, that usually adopted by the French in performing the *touchér*, as it is called. The point of the right fore-finger should be introduced into the vagina and pressed forward gently as far as possible to the anterior portion of the cervix of the uterus, that the foetus may be felt within, through the anterior wall of the vagina and cervix. Some authors state that if the left hand be applied over the fundus uteri, while the finger is in contact with the cervix, you may then agitate the uterus alternately with the finger and hand, until the ballottement is discovered, and you are certain that the tumor in the hypogastrium is the same. I have seen labour immediately follow this agitation rudely performed, and if there is not a great quantity of liquor amnii, you may push many times with the finger in front of the neck, before you perceive the foetus floating for an instant in the liquor amnii, and the next instant falling with perceptible weight on the point of the finger. But without feeling this floating and sinking you may by a careful examination be absolutely certain that the uterus is enlarged, and contains a foetus.

In the two latter months of pregnancy the umbilicus always protrudes above the surrounding surface. In a patient now under

my care, at the end of the seventh month, the umbilicus is perfectly flat; and there are cases in which the navel projects very slightly even at a more advanced period; and there are others in which it becomes prominent at the end of the sixth month. I have never seen a case in which the navel was sunk in or depressed in the three latter months of pregnancy. The navel projects, it should be recollected, however, in all cases of ovarian cysts and tumors, as during pregnancy, and the silvery streaks or lines, called *lineæ albicantes*, also appear on the sides of the surface of the abdomen.

Great importance has always been justly attached, by the most eminent accoucheurs, to the condition of the areolæ and glands around the nipples, as a diagnostic sign of pregnancy. Dr. Hunter had great faith in this sign, inasmuch that he asserted that he could always judge by it whether or not a woman was pregnant. He once evinced how much dependence was to be placed on it. A subject was brought to him for anatomical purposes, but on looking at the breast, from the appearance of the areola, he declared that the female died while pregnant. One of his pupils examined the genitals, and found that she had a hymen; this seemed a contradiction, but the Doctor still adhered to his opinion, and thought more attention due to the former than the latter appearance. On opening the body his assertion proved just; for the uterus was found impregnated. "Obstructions and pregnancy are both accompanied," observes Smellie, "by a stretching fulness in the breasts; but in the last only (pregnancy) may be perceived the areola, or brown ring round the nipples, from which in the last months a thin serum distils; but this cuticle is not always discernible as in the first pregnancy, and even then is uncertain as well as the others." Dr. Denman placed less reliance on the areola, and believed that the changes in it might be produced by any cause capable of giving to the breasts a state resembling that which they are in at the time of pregnancy. "The areola, or brown circle around the nipples, has been represented as an indubitable mark of pregnancy. This is not, however, suspected to be a primary consequence of a particular affection of the uterus, but of the preceding enlargement and alteration of the breasts; and though it generally occurs in pregnancy, it may be produced by any cause capable of giving to the breasts a state resembling that which they are in at the time of pregnancy, and though generally, not universally, I think, in pregnant women." About thirteen years ago I examined a great number of patients at a public institution for lying-in women, with the view of ascertaining the appearances presented by the areolæ at the different periods of pregnancy and subsequent to delivery. In many, during

the early months, the changes in the areola were scarcely perceptible; and in some near the full period they were so slight, and the mammae so little enlarged, that I should have believed, had the other ordinary symptoms of pregnancy been absent, that conception had not taken place. In other individuals the appearances presented by the areolæ were so striking that it was impossible for a moment to doubt the existence of pregnancy. I would recommend you carefully to examine the mammae, the nipples, and glands and areolæ around them, in all cases where you suspect the existence of pregnancy, and see if milk can be pressed out of the nipples, but most cautiously to avoid forming or expressing your opinion upon any one case of doubtful pregnancy without taking a complete review of the whole of the symptoms which I have now described, of the order in which they have occurred, and of the value which each will bear after being rigorously scrutinized. Before proceeding to illustrate by examples the best mode of ascertaining whether pregnancy exists when concealed, complicated, or feigned, and how the diseases which resemble pregnancy may be distinguished from it, I shall shew you Dr. Montgomery's series of drawings representing the changes in the breasts and their areolæ from the third month up to the time of delivery, and also read to you, from his valuable work on the Signs and Symptoms of Pregnancy, the account which he has given of the areola when completely developed. After quoting Rœderer's description, he says, at p. 59, "The several circumstances here enumerated at least ought, in all cases, to form distinct subjects for consideration, when we propose to avail ourselves of the condition as an indication of the existence or absence of pregnancy." Another also, equally constant, and deserving of particular attention, is a soft and moist state of the integument, which appears raised and in a state of turgescence, giving one the idea that if touched by the point of the finger it would be found emphysematous: this state, appears, however, to be caused by infiltration of the subjacent cellular tissue, which, together with its altered colour, gives us the idea of a part in which there is going forward a greater degree of vital action than is in operation around it; and we not unfrequently find that the little glandular follicles, or tubercles as they are called by Morgagni, are bedewed with a secretion sufficient to damp and colour the woman's inner dress. These changes do not take place immediately after conception, but occur in different persons after uncertain intervals: we must therefore consider, in the first place, the period of pregnancy at which we may expect to gain any useful information from the condition of the areola.

I cannot say positively what may be the earliest period at which this change can be observed, but I have recognised it fully at the end of the second month, at which time the alteration in colour is by no means the circumstance most observable; but the puffy turgescence (though as yet slight) not alone of the nipple but of the whole surrounding disc, and the development of the little glandular follicles, are the objects to which we should principally direct our attention; the colour, at this period, being in general little more than a deeper shade of rose or flesh-colour, slightly tinged occasionally with a yellowish or light brownish hue.

During the progress of the next two months the changes in the areola are in general perfected, or nearly so, and then it presents the following characters: a circle around the nipple, whose colour varies in intensity according to the particular complexion of the individual, being usually much darker in persons with black hair, dark eyes, and sallow skin, than in those of fair hair, light-coloured eyes, and delicate complexion. The extent of this circle varies in diameter from an inch to an inch and a half, and increases, in most persons, as pregnancy advances, as does also the depth of colour. I have seen the areola, at the time of labour, almost black, and upwards of three inches in diameter, in a young woman of very dark hair and complexion; while in another instance its breadth around the base of the nipple did not, at any time of gestation, amount to a quarter of an inch, and at first was not more than an eighth; this circle, however, narrow as it was, was studded at nearly regular intervals with the glandular tubercles, which were not unlike a ring of beads. In negro women the areola becomes jet black, with somewhat of a purple shade through it."

LECTURES

ON THE

PHYSICAL AND PATHOLOGICAL CHARACTERS OF URINARY DEPOSITS,

Delivered at Guy's Hospital, London,

BY DR. GOLDING BIRD.

LECTURE I.

GENTLEMEN,—I feel that the period has long passed by when an apology would have been deemed necessary in pointing out to your notice the importance of possessing, at least, a general acquaintance with the most prominent morbid changes to which the urinary secretion is subject. The examina-

tion of the urine in disease is now regarded as one of the most important aids in diagnosis, and which it would be alike injurious to the welfare of the patient as to the credit and reputation of the practitioner to avoid; and it must be a matter of congratulation to every one connected with this great school of medicine, to remember that it was to the talent and industry of one of its former officers that science is chiefly indebted for the addition of the changes presented by the urine to our means of diagnosis. I need hardly say I allude to the late Dr. Marcet, who may be deemed one of the first who succeeded in placing this important part of humoral pathology in its proper position. His example has been ably followed by others, but by none with so much talent, industry, and accuracy, as by Dr. Prout, whose elegant and classic work, in which he has presented us with the result of years of labour, will remain on record as a masterpiece of scientific investigation.

Let me, however, at the outset, impress upon you the fact, that you must not fall into the error of regarding the knowledge of the morbid states of the urine as all-sufficient, and as alone essential in directing your treatment; nor commit the equally serious mistake of regarding every deviation from the natural condition of the urine as constituting a disease *per se*. The true view which you are to take of such changes is to regard them not as entities of morbid action, but as constituting one of a series of analogous changes going on in the system, and as being more valuable in consequence of the facility of detecting it. Let, then, every abnormal state of the urine occurring in disease be regarded as a handwriting on the wall, indicating one of the phases of a morbid state, and not as constituting the ailment itself. The peculiar value of the information afforded by the examination of the urine, arises, in addition to the readiness there exists for detecting any change, from this fluid being a secreted excretion; and not, like the alvine evacuations, being an excretion made up in great part of the debris and effete portions of the ingesta, and therefore liable to have its indications masked by a series of causes which are nearly without action on the urine. The urine, in a physiological sense, must be regarded as arising from three sources, each of which, however, acts in preserving the equilibrium of the delicately adjusted balance of the several functions of the body. The effects of large aqueous potations in producing a copious discharge of pale urine, at once shews one source of the secretion, and points out one of the great functions of the kidneys, viz. the pumping off any excess of fluid which may enter the circulation. The peculiar character of the urine passed just after the

digestion of a meal is complete, partaking often of the physical or chemical characters of some element of the food, indicates a second great function of the kidney, viz. the removing from the system those portions of the ingesta which have been absorbed whilst passing through the small intestines, and thus have entered the circulation, or of excreting from the circulating mass the, often noxious, results of mal-assimilation: of the former, the foetid urine voided after eating a meal of asparagus may be taken as an example; and of the latter, the abundant elimination of oxalic acid from the blood in many forms of irritative dyspepsia will serve as an illustration. The third and very important function performed by the kidney is its serving as an outlet, to evolve from the animal organism those elements of the disorganization of the tissues which cannot serve any ulterior purpose in the economy, and which cannot be thrown off by the skin or lungs. I need not, gentlemen, remind you, that every moment we live each atom of our frame is undergoing some change or other; that old matter is absorbed, and ultimately thrown off by the excretions, whilst an equivalent quantity of new matter is deposited to supply its place. The old matter absorbed is not thrown off as dead tissue, but its elements become re-arranged: a portion, especially its carbon, has to perform an important secondary office in the economy before it is got rid of, whilst its azotized elements are excreted by the kidney; and this constitutes a third variety of urine in health.

Of these three forms of urine distinguished by their source, and often by their physical appearance, the first has been termed the urine of drink, *urina potus*; the second the urine of the chyle, *urina chyli*; and the third the urine of the blood, *urina sanguinis*;—and you must never lose sight of these distinctions in investigating the indications afforded by the urine. This, as well as many other branches of physiological chemistry, has been invested with an amount of interest of which it was previously destitute by the researches of Professor Liebig, who has proved to a demonstration the generally simple relation borne by the elementary constitution of blood and of the animal tissues to the secretions, as well as by the latter individually to each other; and even if the analysis on which these bold inductions are founded be, as is quite possible, shewn to be not rigorously correct, still the reasoning will hold good with regard to general cases, even if it should fail in particular instances.

A single illustration will be sufficient to point out the high degree of beauty and interest thrown round these researches by the labours of those philosophers who have de-

voted their time and talents to the investigation of the chemistry of life. The analyses of several chemists quoted by Professor Liebig have shewn that the ultimate composition of flesh is constant, and is identical with that of blood considered as a whole, and not regarding its proximate composition: thus, when animal fibre is taken into the stomach, it undergoes a kind of imperfect solution, constituting a stage of the primary assimilation of Dr. Prout, and is carried into the circulation, presenting nearly the same chemical composition as the blood with which it becomes mixed, and undergoes certain changes in the lungs, where it assumes probably a more highly vitalized condition, connected primarily with the conversion of its albumen into self-coagulating fibrine; which bodies, however much they may happen to differ in their physical molecular arrangement, are identical in ultimate composition; and, ultimately reaching the nutrient vessels, the elements of the food are deposited in the

substance of a tissue—as a muscle, for example. Ere these new molecules can be deposited, room must be made for them by the removal of the old; and then comes into play one of those beautiful effects of vital chemistry whose simplicity now excites our delight, as much as the mystery which so long enveloped it did our wonder. The exhausted atoms of the muscle cannot be removed as fibres, but its elements must be re-arranged, so as to enter the circulation and be carried to other organs; therefore it undergoes a second assimilation; water and oxygen are conveyed to the atoms of muscle, and the result is a re-arrangement of elements, which, whilst it enables the old tissue to be removed with facility, furnishes the pabulum for other and important secretions. Thus, if to the composition of muscular flesh we add oxygen and the elements of water, we have all the elements necessary for the production of the essential ingredients of bile and urine.

	C.	N.	H.	O.
Two equivalents of muscular tissue	96	12	78	30
Four equivalents of water			4	4
Eight equivalents of oxygen				8
	<hr/>			
	96	12	82	42
	<hr/>			
One equivalent of the organic constituents of bile	76	2	66	22
One equivalent of uric acid	10	4	4	6
Three equivalents of urea	6	6	12	6
Four atoms of carbonic acid	4			8
	<hr/>			
	96	12	82	42

On this hypothesis the muscular tissue is carried into the circulation, combined with water and oxygen; the latter, by uniting with its carbon, in all probability aids in keeping up the temperature of the body; and, on reaching the glandular structure of the liver, 76 carbon, 2 nitrogen, 66 hydrogen, and 22 of oxygen, are, as it were, filtered off in the form of bile, destined to play an important part in the functions of the body before they are ultimately expelled. The kidneys remove the more highly azotised portions in the form of urea and uric acid, whilst the carbonic acid, formed by slow combustion of the carbon of the muscles, becomes exhaled from the surface of the skin or pulmonary membrane, and thus, by a beautiful exertion of that wonderful chemist, *life*, the exhausted fibre is finally expelled from the animal structure.

Of course, to this and all such analogous reasoning the same objection will apply, that the changes we presume to take place are by no means susceptible of positive proof, nor are chemists, even at present, agreed as to the real nature of the proximate, much less of the ultimate, constitution of many of those products the probable origin of which we

are endeavouring to explain. But granting this, still, we cannot overlook the remarkable circumstance of the definite nature of all chemical combinations, and of the really very simple relation borne by many of the characteristic and essential elements of the blood, and of the secretions generally, to each other. Is not the fact, that by adding or subtracting the equations representing the ultimate composition of such bodies, we get results which represent the composition of whole equivalents of organic products, (or yield a numerical expression of atoms, which merely require the addition of oxygen, or perhaps the elements of water, to express the composition of the essential ingredients of the secretions whose formation we should, in the case supposed, really expect), a tolerably satisfactory indication that if we really have not reached the secret source of the varied secretions, yet that we are in the right path towards raising the veil which has so long concealed it from our view.

In the very example I have just laid before you, I have assumed, with Liebig, that C 76, N 2, H 66, O 22, represents the composition of the organic constituent of bile, the choleic acid of Demarçay. On lately

examining the experiments on which this view is founded, the illustrious Berzelius has, in his *Jahres-Bericht der physischen Wissenschaften*, 1839, p. 668, proved that this very choleic acid is a mixture of a series of subordinate organic elements. Still, this does not affect the reasoning; for if the ultimate analysis be correct, the number of atoms of carbon, nitrogen, hydrogen, and oxygen, I have just enumerated, will always represent the composition of the organic ingredients of the bile, whether we consider it, with Demarçay, to be choleic acid; or more correctly, with Berzelius, regard it as made up of several proximate elements.

To return from this digression, let us take a view of the physiological relations borne by the urine to other secretions. We have already noticed the fact of its constituting the stream by which a host of noxious ingredients, either formed within the body, or added from without, are washed away. There is yet another property common to all secretions, viz. their power of temporarily and, within certain limits, compensating each other's action. Thus, so long as the functions of the skin and kidney bear a normal relation to each other, all goes on as in health; a limpid secretion from the one, and an insensible exhalation from the other, announce that a just balance obtains between these two functions. But let the action of the cutaneous function be increased, so that more than a normal amount of fluid escapes from the skin, the kidney compensates for this by secreting a smaller bulk of fluid; so that the urine becomes concentrated, and rises in specific gravity; and thus the balance is for a time preserved, and no greater amount of fluid is drained from the body than in health. If the liver be deficient in its power, either from a mechanical or organic cause, highly carbonized products are eliminated with the urine; and so in a host of similar cases, the possible occurrence of which must never be forgotten in investigating the characters of urine in disease.

We have next to investigate the physical characters of the secretion under consideration; and here we have to notice its density, colour, consistence, odour, and optical properties.

The mode of discovering the density of urine is well known to every one: it may readily be accomplished by means of the gravimeter or hydrometer, the construction of which is explained in all works on Physics; and which I have pointed out to you in the lectures on these subjects. These instruments may easily be made so small, that considerably less than an ounce of urine is sufficient to float them in. If a gravimeter be not at hand, any small stoppered phial will answer the purpose. Thus, counter-balance an ounce bottle, with its stopper, by

means of small shot or sand, in a tolerably good balance, then fill it with distilled water exactly, insert the stopper, and weigh it, allowing the shot or sand to remain in the scale; next pour out the water, replace it with the urine, and again weigh it; then divide the weight of the urine by that of the water, and the quotient will be the required density. For example, in examining a specimen of diabetic urine, if we find the same phial which held 478 grains of distilled water will contain, at the same temperature, 498 grains of the urine, the density of the latter will be nearly 1.042; for $\frac{498}{478} = 1.0418$.

The great utility of discovering the density of the urine is, that it enables us to ascertain the amount of solids escaping from the system by the kidney, and thus enables us to detect an often unsuspected cause of emaciation. To do this, it is necessary to save all the urine passed by the patient in the course of twenty-four hours, and to weigh or measure it with all possible precision; and by means of the bottle or gravimeter, ascertain its density. This precaution of mixing the specimens of urine passed in twenty-four hours is absolutely necessary, as the secretion passed on rising in the morning, after a meal, and at bed-time, differs greatly in specific gravity. From the density thus discovered, a most laborious and accurate observer, Dr. A. Becquerel, has calculated a table, which he has published in his elaborate work "*Sémiotique des Urines*" (Paris, 1841). He has not carried his calculations further than for the density 1.032, which does not include the diabetic range. In the following table I have presented the result of his experiments up to 1.032 for every second degree of the gravimeter, with my own additions up to 1.046, which is sufficient to include all the different densities you are likely to meet with in practice.

The proportion of solids given in this table, as representing the total amount present in 1000 grains of urine of a given density, must be regarded as representing the quantity of absolutely dry matter free from water, as most of these numbers were calculated from data obtained by ascertaining the density of a solution of common salt in water, in which the proportion of the former was known. This will account for the discrepancies existing between the proportion of solids given in this table as existing in urine within the diabetic range (1020 to 1050), and the quantities stated in the well-known table of Dr. Henry.

The mode of using this table is sufficiently simple; for having discovered the density of urine in the manner above described, a single inspection of the table is sufficient to ascertain the quantity of solids and water present in 1000 grains; and by weighing the total

Density.	Water in 1000 grains.	Solids in 1000 grains.
1001	998.35	1.65
1002	996.7	3.3
1004	993.4	6.6
1006	990.1	9.9
1008	986.8	13.2
1010	983.5	16.5
1012	980.2	19.8
1014	976.9	23.1
1016	973.6	26.4
1018	970.3	29.7
1020	967.	33.
1022	963.7	36.3
1024	960.4	39.6
1026	957.1	42.9
1028	953.8	46.2
1030	950.5	49.5
1032	947.2	52.8
1034	943.9	56.1
1036	940.6	59.4
1038	937.3	62.7
1040	934.	66.
1042	930.7	69.3
1044	927.4	72.6
1046	924.1	75.9

amount of urine passed by the patient in twenty-four hours, the weight of solid dry matter escaping from the kidneys may be calculated by a simple rule of proportion. As, however, it is not always easy to weigh the urine, its measure will be sufficient. To apply the table to the discovery of the solids in a given measure, it is necessary to bear in mind that the standard pint measure holds exactly 8750 grains of distilled water. As an example, I have a patient labouring under diabetes mellitus now under my care, who, in the last twenty-four hours, has voided five pints of urine of the density 1.040. On referring to the table we find that 1000 grains of urine of that density contain 66 grains of dry solids; therefore the pint, or 8750 grains, will contain 577.5 grains; for $8750 \times 66 = 577.5$, and as $577.5 \times 5 = 1000$

2887.5 , it follows that the five pints of urine will contain 2887.5 grains, or rather more than six ounces of dry solid matter.

Regarding the average density of healthy urine much difference of opinion has existed, a difference admitting of a ready explanation by the state of health of the individual from whom it was obtained, the period of the day it was passed, the bulk of fluids drank in the course of twenty-four hours, and the character of the ingesta taken at the previous meals. Upon the whole I regard the numbers adopted by Dr. Prout as the most correct, as they very nearly agree with the results of some hundreds of observations made by myself.

In health the average density of urine passed in the morning may be fixed at 1.020, this number falling in winter to 1.015 or thereabouts, and rising in summer to as high as 1.025; variations depending on the amount of fluid expelled from the body and the skin, which by its great amount in hot weather renders the urine more concentrated than in winter, when in consequence of the perspirations being diminished, a larger quantity of water is carried off by the kidneys, and dilutes the urine.

As a general rule the urine passed after complete digestion (urina chyli) is denser than that passed on rising in the morning (urina sanguinis), a difference of four or five degrees in the indications of the gravimeter being exceedingly frequent. This, as a general law, holds good in disease, as the following table, taken at random from the results of observations made during the preceding year, will amply testify; the patients from whom the urine was obtained, being in all nearly of the same age.

Density of the Urine passed at Night. (<i>Urina chyli</i> .)	Density of the Urine passed on Rising. (<i>Urina sang.</i>)	Disease.
1.021	1.029	Slight Hemop-
1.005	1.015	hysteria. [tysis.
1.011	1.008	Hæmaturia.
1.020	1.012	Gout.
1.012	1.011	Hæmatemesis.
1.016	1.011	Bronchoræa.
1.020	1.020	Dyspepsia.
1.025	1.019	Oxaluria.
1.023	1.021	Health.
1.020	1.018	Health.

In these ten cases we find that in seven the urine of digestion possessed a higher density than the morning urine; in one their gravities were alike, and in two we meet with an exception to the general law; admitting in the case of hysteria of a ready explanation, as the night urine examined was part of an enormous quantity secreted after a convulsive paroxysm.

No law can be assigned, nor limits defined, for the density of the urine passed in the day, after partaking of potations of any kind: if but a small quantity be taken, then the density of urine will maintain nearly its normal average, whilst if they be copious it may sink extremely, so as even to approach nearly the density of water itself. A few cups of tea, a few glasses of hock, or a goblet of soda-water, or even mental anxiety, will in many people determine the secretion of urine of a density as low as 1.001; 1.004.

It follows from these considerations that if all the urine passed in the course of 24 hours be collected, and its density ascer-

tained, it will be found to differ considerably from the generally assumed average. For experiments on this subject, we are chiefly indebted to Alfred Becquerel, and this gentleman has assumed, from results of numerous experiments, that the mean density of all the urine secreted in 24 hours is in men 1.0189, whilst in women it is a little lower, being 1.0151, the urine of women being *ceteris paribus* more dilute than that of men; the mean of the urine in both sexes being 1.017. The average quantity of urine secreted in health in the course of 24 hours varies of course with the same circumstances which alter its density; all interfering causes apart, the quantity of urine passed by an adult in 24 hours may be fixed at from 30 to 40 ounces: this is Dr. Prout's estimate, although it may range from 26 to 48 ounces, without exceeding the possible limits of health. The mean fixed by Becquerel is 42 ounces, a quantity far too high for the average of this country: it is highly probable that the cause of the comparatively large quantity of urine passed by the French people is to be found in the excess of the *potages* and vegetable preparations they partake of, in addition to

the diuretic effect of the sub-acid weak wine they so generally drink.

You will often, gentlemen, be struck with the different tints presented by urine in different maladies, and in many the cause producing these varieties is extremely evident: whatever may be the nature of the colouring ingredients of healthy urine, it is pretty certain that *per se* they can only produce a small series of different tints varying according to the state of dilution, from almost colourless, to the healthy amber, and up to dark brown. When much diluted, urine occasionally presents a faint greenish tint, as in the urine of chlorosis and hysteria, and not unfrequently in the urine of infants. If bile or blood be present, a variety of tints, varying from red to brown, blackish green, or nickel green, are produced, the latter hue being occasionally indicative of the presence of cystine. It is often of great importance in diagnosis to determine the nature of the colouring matter of urine presenting a red deep brown, or an analogous tint. In the following table the means of diagnosis are shown at one view.

Colour.	Cause of.	Detection of.	Indications.
Red. A.	Purpurine.	Nitric acid produces deposit of uric acid—no change by heat; liq. potassæ renders it paler; alcohol digested on the extract assumes a splendid purple colour. Density moderate.	Portal derangements; if constant, generally being connected with organic mischief of the liver or spleen.
B.	Blood.	Nitric acid produces a deposit of albumen, coagulation by heat; the microscope discovers floating blood discs.	Hæmorrhage in some part of urinary passages.
Brown. C.	Concentrated state.	Nitric acid produces a deposit of uric acid; after being warmed a few drops of hydrochloric acid produce a fine crimson or purple colour. Density high.	Fever.
D.	Blood.	See B.; generally less coagulable than when red.	
E.	Bile.	A drop of nitric acid falling on the urine in a white saucer, produces a transient play of colours, in which green and pink predominate. Hydrochloric acid produces a permanent green tint.	Obstruction to the exit of bile from the liver or gall-bladder, and the entrance of all, or some of its elements into the circulation.
Greenish-brown. F.	Blood.	See B.; occurring in alkaline urine.	
G.	Bile.	See E.; occurring in acid urine.	

Occasionally urine varies in *consistence*, being either very fluid, as in the majority of cases, or becoming viscid: this change is in some cases only detected by the readiness with which it froths on agitation, and the length of time the bubbles are retained, as in

diabetes mellitus. The presence of mucus will render it more viscid, occasionally so as to allow of its being drawn into threads, although, more generally, the mucus forms a dense viscid layer at the bottom of the vessel. The same thing occurs if pus be present in

a concentrated or alkaline urine, from the action of the saline matters or free alkali upon it, converting it into a mucous magma, in the manner fully described in Guy's Hospital Reports by Dr. Babington and myself. The urine is sometimes found quite fluid when warm, and consolidating into a jelly-like mass on cooling: this depends on the presence of self-coagulating albumen, frequently arising from a fungoid change in the kidneys, occasionally depending alone on functional derangement. In a few rare instances, occurring chiefly in urine loaded with oxalic acid, I have found it quite fluid when cold, and gelatinising when heated, still retaining its transparency. This change I have alluded to elsewhere (MEDICAL GAZETTE, 1842, p. 796), but am as yet by no means satisfied concerning its real cause.

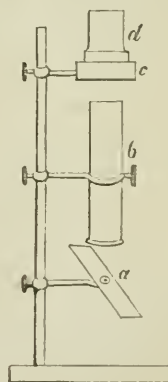
Regarding the optical properties of urine, independently of those which depend upon its colour, none have been applied to diagnosis except the occasional presence of a circularly polarising power in cases of diabetes. So much attention has been attracted to this subject from the observations of MM. Biot and Bouchardat, that any remarks on the physical characters of urine would be most imperfect if it were not alluded to, and as no account of the mode of applying this property to diagnosis exists in our language, I shall briefly call your attention to the facts on which this curious circumstance is based. When a ray of polarised light impinges upon a plate of glass inclined at an angle of $56^{\circ}45'$ to the path of the ray, it is either transmitted or reflected according as the plane of reflection corresponds, or is opposed to the plane of polarization. In either of these cases, if a lamina of any doubly refracting substance, as a piece of bi-axial mica, or common talc, be held so that the ray must pass through it, before reaching the reflecting plate, a physical change occurs. The ray becomes, as it were, split into several, inclined at various angles upon each other: these impinge upon the reflecting plate, part becoming reflected and part transmitted, presenting two series of oppositely-coloured images, with the tints so arranged that if they could be superposed white light and a colourless image would be the result. While the experiment is thus arranged, let the reflecting plate be slowly revolved round the path of the ray, still maintaining its angular position with regard to it, and it will be found that each image will become visible by reflection or refraction twice in each revolution, one being visible at the angle of 0° and 180° , and the other at 90° and 270° . If, then, for the mica, a plate of quartz cut at right angles to the axis of the crystal be substituted, a different series of phenomena will occur; a coloured image of the

plate will be visible in the reflecting plate, accompanied by a complementary one visible by refraction, and on revolving the reflecting plate, instead of the alternate appearance of two oppositely coloured images at the four quadrants of the circle, a series will be seen as if, by revolving the plate, we were ascending a spiral path, at each turn of which a fresh colour was given to the image; the image becoming coloured with the tints arranged in this circle one after the other as the plate is revolved—

	Blue	
Indigo		Green
Violet		Yellow
Red		Orange

the changes being from blue, green, to red, &c. or *vice versa*, according to the molecular constitution of the crystal. This phenomenon is termed circular polarization, and is said to be right-handed or left-handed, according to the direction in which the spectral tints appear during the revolution of the analysing plate. If the ray, instead of passing through a plate of quartz, be transmitted through a thick stratum of syrup or fluid albumen, analogous phenomena are visible, and by their possessing this property of circular polarization, their presence in fluids may be discovered.

The apparatus which I have for some



Explanation of the figure.

a, the reflector; *b*, the brass tube for holding the fluid under examination; *c*, the grooved support for the analyser; *d*, the piece of wood supporting the bundle of inclined glass plates.

years used for this purpose is very simple; it consists of a common retort-stand, having the rings removed, and three different pieces of apparatus substituted. On the lowest arm swings the reflector, being a little

wooden frame having a dozen pieces of thin window-glass packed into it: this forms an excellent polarizing mirror. On the middle arm is screwed a tube of brass, one inch in diameter and six in length, open at top, and closed at the bottom with a piece of thick glass; a circularly grooved piece of wood, perforated in the centre, is screwed on the upper arm, and a second piece of wood, carrying the analyser, drops into this circular groove, so as to be perpendicularly over the brass tube. The analyser consists of a thin plate of tourmaline, or a Nicholl's single-image prism, or what answers exceedingly well, of a dozen pieces of the thinnest flat glass packed together and covered at the edges with sealing-wax so as to exclude dust. This little bundle of plates is placed in the piece of wood, which is excavated for the purpose, and retained there in an inclined position, so as to form a considerable angle with the axis of the brass tube below. When the apparatus is thus arranged, turn the analyser to such an azimuth as shall cause the light reflected from the mirror to disappear as completely as possible. Pour into the brass tube a solution of sugar, and, on looking through the analyser, a coloured circular image will become visible, which will change from green to blue, violet, red, and orange, by turning the analyser from left to right through an arc varying with the quantity of sugar present in solution.

If, then, instead of syrup, diabetic urine, previously filtered to render it as transparent as possible, be placed in the tube, an analogous series of phenomena will be observed. The yellowish colour of the urine will interfere with the perfection of the coloured images; but this may be removed by agitating the urine with some recently ignited ivory-black, and filtering it; urine becoming sufficiently bleached to allow of the colours produced by its circularly polarising power becoming developed. Albuminous urine produces similar optical phenomena.

In practice, you will, unless completely *au fait* to this beautiful branch of physics, find yourselves frequently at a loss in seeking for the presence of sugar and albumen in urine, from the presence of its polarising power, for independently of the tact required in experiments of this kind, the partial opacity of the secretion, the presence of colouring matter, and the time required to remove these difficulties, will prevent the polariscope from ever affording important assistance in diagnosis.

ESSAYS ON THE DISEASES

OF THE

HEART, GREAT VESSELS, AND CIRCULATING FLUID.

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(For the *London Medical Gazette*.)

[Continued from p. 653.]

GENERAL PATHOLOGY OF THE HEART.

Of alterations in the force and extent of the Impulse and Sounds of the Heart.

UNDER many circumstances the impulse of the heart is perceptible over the whole front of the chest, and even in the epigastric region; and the sounds of the organ are in the same, and even in a much greater degree extended. They are occasionally heard with greater or less distinctness over almost every part of the chest.

As a general rule, the more extensively and powerfully the impulse of the heart is felt, the less clearly is its first sound to be appreciated; when the impulse is excessive, this sound is no longer distinguishable; it is annulled. Along with the increased extent and force of the impulse, the more slowly in general is the ventricular contraction performed; the period over which it extends is lengthened, and it becomes a gradual and progressive movement, instead of a sudden sharp grasp as in health. The second sound under these circumstances is also rendered much less distinct than it is naturally, and has sometimes even been held to be extinguished entirely.

The explanation of these morbid phenomena is easy. They always present themselves in connexion with a greater or less degree of thickening of the walls, and of general increase in the bulk of the heart; they are consequences of *hypertrophy* of the muscular substance of the organ. The unwieldy ventricles then contracting more slowly or gradually than usual, there is no sudden grasp of the charge of blood which they contain, and no instantaneous tension of the mitral and tricuspid valves to render the beginning of the sound abrupt and definite: the conditions necessary to the rapid accomplishment of the ventricular systole,

in a word, are wanting, and the sound that accompanies it is in the same degree obscure. Moreover, the wave of blood being now squeezed gradually from the ventricle through the aortic and pulmonary arterial orifices, not projected suddenly into them, they transmit what they receive about as fast as it is supplied, and the valves which guard these outlets, consequently, are not brought smartly together by the recoil of over distension. In this way the second sound comes to lose its character of abruptness and precision, and in some instances even to be masked completely.

Under circumstances the opposite of those that have just been contemplated, the impulse is much lessened; whilst the first sound, on the contrary, is in a greater or less degree clearer than natural. This state of things is now known to accompany that condition of heart in which its cavity is increased in capacity, or *dilated*, and its walls are diminished in thickness. The impulse then is often inappreciable, but the first sound becomes clear and short, like the second sound of the healthy heart, and the second sound is also somewhat increased in sharpness and precision. Here we have *simple dilatation* of the heart—in other words, increase in the capacity of the ventricles—without any augmentation in the strength of their bounding parietes, frequently indeed with a positive diminution in thickness of the muscular compages. Under these circumstances the relatively or absolutely attenuated walls of the ventricles contract with greater rapidity, but with less force than usual: the conditions requisite to the production of a sharp, clear, first sound, exist in perfection; the walls of the ventricles acquire their state of tension with the greatest rapidity, and the auro-ventricular valves are smacked together with commensurate celerity. Farther, the aorta and pulmonary artery being more suddenly distended than usual by the quick stroke of the ventricles, the elastic force of the vessels comes into full play, and the semilunar valves at their roots are jerked down upon one another with great rapidity; hence the clear tone of the second as well as of the first sound.

In a third set of circumstances, viz. when the ventricles are dilated, and the thickness of their walls is increased

at the same time, the pulse is singularly augmented in force; it seems as if a sharp blow were then given by the apex and anterior aspect of the heart to the thoracic parietes, the stroke being accompanied by increased loudness in the coincident sound. The muscular compages of the heart are here increased in thickness, and consequently in strength, and the capacity of the ventricles is also augmented: the wave of blood which they emit is large, and this makes the closure of the auriculo-ventricular valves sudden, and the first sound commensurately well defined and loud; the great arteries being at the same moment distended excessively and far more rapidly than they can transmit the charge thrown into them: the recoil of the valves at their roots is in the same proportion sudden and violent, whence the greatly increased loudness of the second as well as of the first sound.

The various states in which the impulse of the heart is lessened stand of course in direct contrast with those in which it is increased. Diminution in the force with which the heart strikes against the ribs is a consequence either of simple weakness of the organ, which may be local, and consequent on disease and alteration of its structure, or may be but a part of a general state of debility: the body having been brought extremely low by privation or wasting disease, by loss of blood, diarrhoea, &c. the heart participates in the general failure of power. Here the debility of the heart may be regarded as a kind of superinduced state. Sometimes, again, diminished impulse is connected with obstacles to the circulation outwards from the heart, in which case the proper actions of the organ, overwhelmed by a load which it cannot throw off, are impeded. In such circumstances the ventricles soon begin to enlarge; and dilatation, conjoined with attenuation of the walls of these cavities, appears to be the most efficient of all causes in lessening, and finally in annulling, the impulse of the heart.

Any increase in the force and frequency of the heart's action is spoken of under the general title of *palpitation*, which is very comprehensively and accurately defined:—An action of the heart, sensible and distressing to the individual, of greater force and inge-

neral frequency than proper, and sometimes, though not always, irregular in reference both as to force and frequency.

Palpitations are connected with a great number of diseases of the heart, and are often extremely important as indicating the state of affairs in that organ, and in guiding us aright in our treatment. Palpitations suddenly set up in a diseased heart,—where one or other of the valves is thickened or defective, one or other of the orifices contracted, &c., very certainly proclaim an extension of the mischief, a state of the endocardium or lining membrane of the heart which is the precursor of additional thickening, and greater imperfection of the valves, &c. Such palpitations ought, therefore, to be carefully watched, and met upon general antiphlogistic principles so often as they recur. If this be done discreetly, yet resolutely, it is astonishing how much may be done in preventing the progress of cardiac disease. I have many cases in my eye at this moment, two in particular of hypertrophy with dilatation, and two of mitral disease, accompanied in one instance with considerable dilatation of the left ventricle, which I have watched for several years, and which are not only no worse now than when I saw them first, but are decidedly better.

Palpitations, again, are often entirely *nervous* in their nature, *i. e.* they are not associated with, or dependent on, any disease of the heart or its parts. Palpitations frequently arise under the influence of moral emotions: they are constantly found to arise from the sympathy of the heart with the stomach, which is then apt to contain indigestible or undigested matters. Very often they are but a portion of the exaggerated excitability or impressibility which we characterize as hysterical, whether it meet us in men or women. What may be styled hysterical palpitation sometimes proceeds to an alarming degree. Some persons are attacked with palpitations when they sleep under an unusual load of bed-clothes: they awake in the middle of the night with the heart throbbing as if it would burst, but find immediate relief by rising and walking about in the cool air for a few minutes. I have known an attack of palpitation, which lasted for nearly two entire days, induced in an individual who never suffered from any thing of

the kind before, by the use of what was called a medicated vapour bath.

Of alterations in the seat of the Impulse and Sounds of the Heart.

In the natural and healthy state the first sound of the heart is perceived most distinctly between the fourth and fifth ribs, a little below and to the outside of the left nipple. The second sound, again, is best heard nearly on a level with the lower edge of the third rib, above and rather to the inside of the left nipple. The impulse, as already stated, is most remarkable in the space between the fifth and sixth ribs, just under the left nipple. In a variety of morbid conditions, however, the sounds and impulse of the heart cease to be recognizable with their maximum of intensity in the situations just indicated: in one instance they are higher, in another lower, in a third they are more to the right, in a fourth more to the left, &c. The causes of these displacements of the sounds and impulse, which are by no means unfrequently met with, are for the most part extrinsic to the heart. In subjects having a long and narrow chest, the heart is generally situated very decidedly lower in regard to the clavicle than in those in whom the thorax is expanded and short. Persons who have large bellies, and take little exercise, seem to have the heart very commonly placed somewhat higher in the chest than natural; and in those cases of flatulent hysteria in which the central organ of the circulation is sympathetically affected often to so great a degree, it may frequently be perceived throbbing some inch or more above its ordinary level; it is literally thrust up into the chest by the stomach and intestines distended with gas. *Displacements of the heart downwards* are of greater importance, and have been particularly described by pathologists under the title of prolapsus of the heart. The causes of this downward displacement inhere in diseases of the superior lobes of the lungs and upper parts of the thorax, in disease of the heart itself or of its great vessels, particularly the aorta, and also in a general laxity of the abdominal parietes, and absence of that support which the heart receives upon the floor of the diaphragm. In cases of displacement downwards, the first and second sounds,

instead of having their greatest intensity between the third and fifth ribs, present themselves most distinctly between the sixth and eighth ribs, and the impulse is then felt in the epigastric region; to the outside of the ensiform cartilage perchance, instead of its natural situation, the space between the fifth and sixth ribs.

Lateral displacement of the heart is frequently encountered, generally in connexion with diseases of the lungs and pleura, especially chronic pleurisy accompanied by effusion, a disease in which the heart is constantly found beating several inches to the right or left of its natural situation. *Displacement backwards* occurs more rarely, although it is still occasionally met with, generally associated with aneurism of the anterior aspect of the arch, but in a few rare instances with the presence of abscesses and tumors of the anterior mediastinum.

It will be enough if I merely allude, in passing, to those singular cases in which the viscera generally—the heart among the number—are transposed, or situated on the side of the body opposite to that on which they are usually placed, as possible causes of errors in diagnosis. M. Isidore Geoffroy de St. Hilaire has referred to nearly sixty cases of transposition of the viscera which have been particularly described or indicated. We are therefore bound to be upon the watch for the possible occurrence of such a thing again and in the course of every-day practice.

Of alterations in the Frequency and Rhythm of the Actions of the Heart.

The greater number of diseases to which the body of man is obnoxious are familiarly known to have the effect of increasing the frequency and very commonly the force also of the heart's action. From the 60 or 70 contractions in a minute, which may be regarded as the natural number in the majority of adults, we find the heart beating 100, 120, 140, and more, in the same brief interval, in the course of febrile and inflammatory diseases generally.

In other kinds of disease, on the contrary, the pulsations of the heart fall short of the number which belongs to health. Diseases of the brain, in especial, are well known frequently to have the effect of rendering the pulse

slower than natural. Instead of 60 or 70, it is often no more than 40 or 50 in serious affections of this important organ. Diseases of the heart itself have also, in some instances, a very remarkable effect in diminishing the number of its pulsations. In hypertrophy of the heart the pulse is bounding and rarer than proper; but it is in connexion with contraction of the aortic orifice that the most extraordinary degrees of slowness have been observed. Here the ventricle, engaged in squeezing its charge through a hole little or no larger than a goose-quill, perhaps, has been found contracting with no greater frequency than 25, 20, and even 16 times in the course of a minute. We also possess certain medicines which have the wonderful and most valuable property of lessening the force and abating the frequency of the heart's action. The class of narcotics generally enjoys this faculty in the most striking degree. Some recent experiments of M. Poiscuille have shown that a full dose of opium diminished the injecting force of the heart in a horse by exactly one half. But of all the medicines which reduce the force and frequency of the ventricular contractions, the foxglove is the most remarkable. Some years ago I was desired to visit a young married woman, who, for certain presumed or actual threatenings of phthisis pulmonalis, to which several members of her family had fallen victims, had been recommended to try digitalis as a preventive. She had been furnished with a quart bottle of the Infusion, and directed to take a table-spoonful three times a day. This she had done very regularly up to the time of my visiting her, when there were not more than three or four doses left in the bottle. She was lying in a state of complete prostration; sick at stomach, and making occasional efforts to vomit; as pale as indifferently bleached wax, and with a pulse which, both at the heart and the wrist, did not exceed 30 per minute. Other cases of the same kind, and to a still greater degree, have been repeatedly observed and recorded by practitioners. In speaking of unusual slowness of pulse, we ought not to forget that there are individuals in the enjoyment of good health who have naturally a slow pulse. I knew, intimately, a young man of 20, whose pulse, in health, did not exceed 48 and 50.

The alterations in the actions of the heart just considered are compatible with perfect regularity in the recurrence of these actions. The retardation appears, for the most part, to occur in connexion with the silence that follows the click of the sigmoid valves, *i. e.* along with the systole of the auricles, the diastole of the ventricles: it seems as if the ventricle were then long of filling and in getting ready for a new contraction.

In many cases, however, alterations in the actions of the heart of a different description are observed. Having completed a certain number of beats, for example, the heart pauses, and the interval of a beat is lost in a total silence or inaction. This is what constitutes an *intermission* in the action of the heart. Intermissions, in many cases, recur with a considerable degree of regularity; the pause is observed after every third, fourth, fifth, sixth, or other beat; often they intervene very regularly for a time, and then they present themselves very irregularly. It sometimes happens that whilst the finger upon the radial artery indicates the absence of a beat, the ear applied to the precordial region assures us that the rhythm of the heart is preserved. In this case one of the ventricular contractions, that which corresponds with the defective arterial pulse, is only much weaker than the rest. This kind of intermission was characterized by Laennec as *false*, in contra-distinction to that in which the ventricular contraction failed in fact, and which he designated as the *true* intermission. Sometimes we hear the ventricle, having made its rhythmical or proper contraction contract precipitately and between two of its beats, before it has had time to receive so much blood from the auricle as will influence the pulse of the artery at the wrist. The rhythm in this case, as reckoned by the pulse in the extremities, is preserved, but the ventricle has made two contractions in the time, and the rhythm is consequently defective in reference to the heart.

Many other irregularities in the action of the heart are met with in practice, and have been particularly described by Laennec and other writers on the subject. In one case a short series of regular beats is succeeded by one or more hurried and irregular pulsations.

Sometimes these irregular beats have all pretty nearly the same force, and again the impulse and the sounds seem to be different in reference to each, so that the heart is most tumultuously and strangely affected. In one case the irregularity proceeds without any pause that can be called an intermission; in another intermissions of such length occur that it seems as if the heart were about to cease from its actions for ever. In the midst of all the irregularities encountered, it is often possible to analyse their nature and to indicate their precise elements. "We can sometimes," says M. Bouillaud, "make out two and even three motions of dilatation for a single contraction of the ventricles; sometimes, on the contrary, we perceive two or three contractions for a single dilatation." In other circumstances, instead of the two actions and the two rests which go to the formation of a complete beat, M. Bouillaud has demonstrated, in opposition to high authorities, that there are, occasionally, three and even four distinct actions and as many rests in the course of the beat. When three sounds are heard, it is generally in consequence of a repetition of the second sound, or rather in consequence of the sounds which, in the healthy state, occur simultaneously at the roots of the aorta and pulmonary artery, occurring separately, the one a little later than the other. If one ventricle empty itself more rapidly than the other, and the diastole follow the systole in each immediately, it is obvious that the second sound must become double. The triple sound, however, appears occasionally to be connected with the action of the ventricles, or the reduplication of the first sound; it can only happen in consequence of the two ventricles contracting at different times; a case which it is not difficult to imagine in connexion with impediments at one or other of the auriculo-ventricular orifices to the access of the charge of blood which is necessary to excite the systole of the ventricles: the access being free in one, obstructed in the other, that which is first charged may contract before the other, and so give rise to the irregularity under review. Four sounds to a single beat could only be effected by the alternate action of the right and left half of the heart: the right ventricle contracting first would be followed by the click of the

sigmoid valves of the pulmonary artery; the left ventricle contracting would be succeeded by the click of the aortic sigmoid valves.

Irregularities of the various kinds just described are the certain indication of contractions of one or more of the orifices of the heart, and of alteration in the substance of the valves which guard them. They are, therefore, generally to be regarded as incompatible with the long continuance of life. Nevertheless, we do occasionally meet with hearts which beat in the most strange and anomalous manner in individuals who are in the present enjoyment of good health, and who assure us that they had never been seriously ill in their lives. I very lately met with two cases of this kind, in individuals who proposed their lives for insurance, at the office where I am medical adviser. The alterations in both instances were of that kind in which two or three pretty regular beats are followed by a series of irregular and tumultuous beats, with intervening intermissions. One gentleman, a master-builder, owned to me, that in running up a ladder or a stair, or in making any great effort, he was apt to feel short-winded, but without any particular distress about the region of the heart. The other, a timber merchant, would not allow that he had ever been short-breathed, or suffered from palpitation, or been aware of any peculiarity about the heart, until his very irregular pulse was remarked upon by a medical friend. This led him to consult more than one physician, both in London and Paris, Dr. Elliotson among the number, who was kind enough to refer to his note-book more than two years back, and show me that he had found this gentleman's heart beating at that time in the same unrhythmical, and apparently formidable way, as it did on the day I spoke to him. The late celebrated Duchess of Gordon is said to have had a heart which acted in a very irregular manner through the whole course of her long life, and to have transmitted the peculiarity to more than one member of her family.

Excessive irregularity in the action of the heart, occurring in the course of an acute disease, is always a symptom of a most alarming description. When, from having been regular, though rapid, the beats suddenly lose all character of rhythm, and the pulse

at the wrist becomes a flutter, fibrinous concretions have almost certainly been formed in the heart, and the patient will be lost. I shall have occasion to revert to this point by and by.

Of alterations in the character and quality of the Natural Sounds of the Heart.

It is difficult to find two individuals, the sounds of whose hearts are precisely, and in every respect, alike; one is clearer, or one is duller than the other, in every conceivable degree. In many cases, however, the extent to which the sounds differ in point of distinctness or dullness from those that are most generally perceived, brings them fairly within the category of disease, and they have in fact been demonstrated in repeated instances to be connected with alterations of the valvular apparatus at one or other of the orifices, and with increment and decrement in the thickness and structure of the muscular compages of the heart. In some instances, the sounds of the heart are so weak that they can only be seized by the practised ear, and with something like a stretch of the attention; and, again, the sounds are so loud that they can even be heard at some distance from the body, or by merely approaching the ear to the chest of the patient.

In some cases, the first sound has the sharpness or crispness of that which is heard when two strips of parchment are smacked together. This quality of sound M. Bouillaud has spoken of under the title of the *timbre parcheminé*, and he has found it to accompany a state of morbid thickening, or hypertrophy and rigidity, of the mitral valve especially. Instead of this dry sharp character, again, the first sound may have a character of obscure roughness or of hoarseness, in which case M. Bouillaud informs us that the mitral valves will be found spongy and swollen, soft and flaccid, not firm and unyielding as in the previous instance. I have frequently heard this obscurely hoarse character of the first sound, but have always associated it with the blowing or bellows murmurs—with the abnormal sounds of the heart.

In connection with palpitations of considerable violence, at the moment of the impulse and of the natural first sound, an additional slight *metallic*

click is frequently heard, which has attracted the attention of pathologists, and been variously explained by them. This metallic click of the heart is closely imitated by covering the ear with the palm of one hand and striking the back of it sharply, but lightly, with a finger of the other hand.

Laennec held that the metallic click was produced when the point of the heart alone struck against the thoracic parietes; but he invoked the presence of a few bubbles of air in the pericardium as a means of explaining it. Dr. Hope maintained that the inequality of the thoracic parietes, occasioned by the greater prominence of the ribs than of the intercostal spaces, was an essential element in its production; he could even make it disappear by pressing upon the intercostal space between the fifth and sixth ribs. British inquirers, particularly Dr. Williams, in assigning its due influence to the stroke of the heart against the thoracic parietes in increasing and impressing additional characters upon the first sound, have rendered the explanation of the metallic click easy. The stroke of the ventricles against the grating of the chest, null in health and in a state of repose, is not without influence in disease, and when the action of the heart is increased. One effect of the exaggerated ventricular systolic stroke is the metallic click or tinkling.

[To be continued.]

ON THE PREVENTION OF PHOSPHATIC DEPOSITION.

By MR. URE.

(For the Medical Gazette.)

EVERY medical man familiar with the treatment of urinary disorder, must confess, that among the most puzzling cases he encounters, are those characterised by a deposition of the earthy phosphates: and that, while it is an easy matter to render acid urine alkaline, it is by no means so easy to render alkaline urine acid.

Mons. Rayer, in his recent elaborate work on Diseases of the Kidney, has given under the head of "*Néphrite simple chronique*" (tom. i. p. 372), the reports of eight cases of individuals in whom the urine was alkaline, and

depositing phosphates. Out of these eight we find no less than five in which the remedial means resorted to effected no change in the qualities of the urine; in one, great improvement ensued; two only were cured, each of whom were under 30 years of age.

In a paper of mine published in volume xxiv. of the *Medico-Chirurgical Transactions*, it was stated that when benzoic acid, or a benzoic salt, is administered internally, hippuric acid is formed, and may be discovered in the urine. It was moreover suggested, that the therapeutic application of the above fact might prove beneficial in the treatment of certain forms of gravel, and in disordered conditions of the renal secretion, connected with a gouty habit. Some interesting particulars in corroboration of these views have been since recorded by Dr. Walker, of Huddersfield,* and by Mr. Soden, of Bath.† These gentlemen, however, exhibited the benzoic acid in union with balsam of copaiiba. The following case, which has been attentively watched along with me, by my intelligent friend Mr. Farquhar, of Albemarle Street, will, it is hoped, serve to illustrate the pure *dynamic* effects of the remedy, in a clear manner.

H. H., æt. 37, of spare make and sedentary habits, consulted me upon the 9th May, 1842, relative to a disorder of the urinary secretion. He said that about ten months previously he noticed for the first time a whitish deposit in his water, which ere long concreted on the chamber-pot, forming a hard gray crust, most difficult to remove. The urine had a very offensive odour, and varied occasionally in appearance, presenting sometimes a greenish, at other times a brownish colour. At the above date it was slightly opaque, and of a pale yellow hue, emitting a pungent ammoniacal smell; alkaline to litmus; and effervescing briskly upon the addition of a few drops of hydrochloric acid. It threw down, almost as soon as discharged, a white flocculent sediment, consisting of phosphate and carbonate of lime. It did not afford any uric acid. Its specific gravity was 1.023. It was voided without pain or difficulty, and in a full stream. There was little or no increase of the mucous secretion,

* Provincial Medical and Surgical Journal, February, 1842.

† Ibid. August, 1842.

and no albumen. His appetite was good, his tongue clean, and he slept well; but he was pale, complaining of general lassitude and languor, and of a sense of weakness across the loins. His bowels were generally confined.

1000 grain measures of the above urine evaporated to dryness by a water bath, at a temperature not exceeding 160° Fahr. left only 36 grains of dry extract, and exhaled during the process a great quantity of ammonia, as proved by a slip of moist red litmus paper, held over the dish, becoming instantaneously blue.

He was directed to take an aperient dose of rhubarb, ten grains of benzoic acid twice in the day, and to live well but plainly.

May 12th.—Has taken the medicine without suffering the slightest inconvenience. He says that the urine after the first dose became clear, and ceased to deposit any chalky sediment. It is now natural in all respects—acid to litmus; specific gravity 1.022.

After six days longer, he discontinued the use of the benzoic acid. Towards the end of the month the urine became again alkaline, and I was induced to try him with the usual routine of medicines recommended in cases of this description, in order to see whether the urine could be brought to a permanently normal state. He was accordingly directed to take nitric acid, in full doses, thrice a day, and an opiate at night. These, after a sufficient trial, produced no change. Hydrochloric acid, sulphuric acid, combined with sulphate of iron, bark, tartaric acid in conjunction with sal-ammoniac, were each in turn freely administered, but to no purpose; for the urine continued alkaline, and loaded with white sabulous matter. He eventually resumed taking the benzoic acid, and with immediate good effect. When Prof. Mitscherlich, of Berlin, visited London in October last, I had the advantage of this distinguished chemist's inspecting the above patient's urine along with me, and verifying the remarkable change produced.

Dec. 1st.—The patient again applied to me on account of a return of the turbid alkaline urine. I found its specific gravity 1.024. 2 ounces evaporated in vacuo left 28 grains of extract, consisting of animal matter, salts, with but little urea. Ordered to recommence the benzoic acid.

4th.—Urine is now natural, remaining limpid and acidulous after standing for 24 hours; the acid stain is permanent on litmus paper; its specific gravity is 1.020; two ounces yielded, by evaporation, 49 grains of extract.

Thus, after the administration of the benzoic acid, the urine, although of an inferior density, afforded nearly double the amount of solid residuum that it did previously.

11th.—A slight sediment has made its appearance in the urine, which proves, upon microscopic examination, to be crystals of ammoniaco-magnesian phosphate, unaccompanied by the amorphous phosphate, or carbonate of lime.

To suspend the use of the benzoic acid, and to take 20 minims of hydrochloric acid, diluted with water, thrice a-day.

25th.—Urine turbid, alkaline, effervescing briskly with nitric acid, notwithstanding he has been taking hydrochloric acid regularly during the last fortnight. The sediment consists chiefly of phosphate and carbonate of lime, and is deposited only from the urine secreted during the course of the night.

To take 8 grains of benzoic acid at bedtime, and to discontinue the hydrochloric acid.

30th.—Urine transparent and acid, remaining so after many hours; specific gravity, 1.018. It contains the natural proportion of phosphates and uric acid. On account of some uneasiness in the loins, he was ordered to rub in the tartar emetic ointment.

Jan. 12th, 1843.—The uneasiness formerly complained of is removed. He has ceased to take any benzoic acid for five days past. The urine is somewhat cloudy. At the suggestion of Dr. Prout, I was led to prescribe for him the solution of acetate of ammonia in half-ounce doses.

20th.—Urine still cloudy, notwithstanding the use of the spirit of Mindererus. In consequence of his suffering from some irritation within the chest, he was desired to employ the same counter-irritant salve, to take small doses of tartar emetic in solution thrice daily, and a dose of benzoic acid every night.

22d.—Feels much better in all respects; the pulmonary oppression is gone; urine natural, and continues

limpid and acid after several days' repose.

It may be observed, in conclusion, that his general health and appearance are materially improved; and he is now enabled to check all tendency to calcareous urinary sediment by simply swallowing a few grains of benzoic acid at bed-time.

It has appeared to me expedient to give the above case at some length, as it offers several highly instructive points for consideration. The subject is a man in the prime of life, stricken with slow consuming disease, complaining of languor, lassitude, and progressively losing flesh and strength. His urine, (and the urine generally furnishes a good criterion of unhealthy action in the system), is alkaline, throwing down a white starch-like sediment. It is deficient in uric acid, and the greater portion of the urea is resolved into carbonate of ammonia. No other substance, except the benzoic acid, seemed capable of controlling the septic influence which led to these changes. Other vegetable acids were not tried, as they uniformly disorder the stomach, and mineral acids failed. The latter, indeed, according to Sir B. Brodie's experience, are much less influential in cases like the present, where the phosphate is deposited by the urine in the form of an impalpable powder, with little or no increase of the mucous secretion, than in those in which the urine contains the triple phosphate*. Benzoic acid, therefore, enables us to solve the hitherto embarrassing problem of rendering an alkaline urine acid at pleasure, and consequently of obviating the irritation which such urine occasions in the membranous surface with which it comes in contact—a species of irritation which opium is not unfrequently employed to allay.

The transition to the ammoniacomagnesian phosphate is noted upon the 11th December, 1842. This may be ascribed to some faulty assimilation in the first passages, as it yielded readily to the exhibition of another acid, viz. the hydrochloric, which did not affect the former deposit. Thus a reflex light, so to speak, is always thrown upon the phenomena of disease from carefully studying the action of remedies. I may here point attention to the fact,

that I have observed a copious formation of crystals of the above triple phosphate in urine after a repast of *sour-kraut*—a circumstance, by the way, which may perhaps account for the great immunity of the Germans, who partake freely of that food, from uric acid calculus.

Not only benzoic but likewise cinchonic acid is transformed, by passing through the system, into hippuric acid, as was established by me last spring*. To detect the free hippuric acid after the administration of one or other of these acids, it is merely requisite to inspissate a portion of the urine by means of a steam-bath, to boil the resulting extract with alcohol *in vacuo*, and allow a little of the clear supernatant liquid to evaporate spontaneously upon a slip of glass. In the course of some hours, characteristic crystals of hippuric acid, namely quadrangular prisms with dihedral summits, may be distinguished with the microscope. This agrees with the recent researches of Pelouze, who has shown that urea may be present along with lactic acid or hippuric acid, without entering into chemical combination with either of them†; thus demonstrating the fallacy of all the theories based upon the supposition of the existence of lactate or hippurate of urea.

In order to ascertain the solvent power of a urine containing hippuric acid, upon phosphate of lime, the following experiments were instituted. A quantity of sub-phosphate of lime was separated from fresh filtered urine by means of pure caustic ammonia, in a glass vessel excluded from access of air. The precipitate was well washed with distilled water and dried. A sub-phosphate was in this way procured, identical with that which forms the various deposits and concretions in the human body. A certain measure of the said urine, having a specific gravity of 1.025, was allowed to digest at a blood-heat along with a given weight of the above sub-phosphate. After three quarters of an hour had elapsed it was saturated with caustic ammonia, and thereby yielded more than double the amount of sub-phosphate of lime which natural urine of the same specific gravity contains, according to the observations of Cruekshank.

* Pharmaceutical Journal and Transactions, June 1842.

† Annales de Chimie, Sept. 1842; p. 65.

* Lectures on Diseases of the Urinary Organs, p. 220.

Both the prepared sub-phosphate and the carbonate of lime are promptly taken up by a warm aqueous solution of hippuric acid; which may thus, independently of its antiseptic agency, serve to hold dissolved any excess of these inorganic matters. Human urinary calculi occasionally consist of one or both of them. Frommherz (Jahrb. der Chemie u. Phys. xvi. 329) has given the details of the analysis of a stone from the human bladder, composed of 90.673 per cent. of carbonate of lime, 2.966 of phosphate of lime, 4.015 of albumen and colouring matter; the nucleus being a particle of quartz. Bergemann (Poggend. Annalen, xix. 558) examined a human urinary calculus, of which the main constituent was carbonate of lime. Winkler (Geiger's Mag. xxi. 253), on the other hand, met with a calculus containing no less than 87.627 of phosphate of lime. A prostatic concretion, examined by M. Barruel (Journ. de Chimie Med. vi. 12), was composed of 80 per cent. of phosphate and carbonate of lime, and 20 per cent. of a substance perfectly resembling coagulated albumen. Indeed I am disposed to believe, with Dr. Yelloly, that phosphate of lime is seldom found in animal concretions uncombined with carbonate of lime (Phil. Trans. 1829, p. 79).

Phosphatic depositions are frequently observed in conjunction with gouty affections. Hippocrates says that a thick urine, which forms a whitish sediment, *παχὺ δὲ οὐρὸν λευκὴν ὑπόστασιν ἔχον*, oft betrays pains in the joints (Prædict. lib. ii. cap. 10, n. 7). A remarkable case is collated by Haller (Disp. Pract. tom. viii. p. 795): "De materiâ calcareâ post diuturnam arthritidem per vesicam urinariam eductâ." "I know a gouty subject," says Naumann (Handbuch der Med. Klin., tom. vi. p. 398), "who suffers from chronic catarrh of the bladder. From time to time the urine becomes milky, and throws down a quantity of muco-albuminous matter mixed with phosphate of lime." Mons. Civiale, a deservedly high authority in questions of this kind, remarks (Du Traitement Médical et Preservatif de la Piëre, p. 65), "chez les personnes atteintes depuis longtemps de la goutte et déjà épuisées par les souffrances, la gravelle qui survient ou qui continue est plus spécialement phosphatique." "I know

one person (Otto, by South, p. 103) in whom, during an atomic attack of gout, the whole mouth, throat, and gullet, were largely covered with a whitish mucus, which, when dried on blotting paper, left behind a large quantity of phosphate of lime." Tiedemann found white stone-like roundish concretions, principally consisting of phosphate of lime, in most of the muscles, especially in those of the extremities, of a gouty subject (op. cit. p. 252). It is, moreover, well ascertained, that the calcareous incrustations which are met with between the serous and fibrous coats of arteries are frequent in the gouty; and in many instances tophaceous concretions contain no urate of soda, but phosphate of lime (John, in Meckel's Archiv. für die Physiologie, vol. i. part 4, p. 513*).

Hence it appears probable that, in many such cases, the calcareous deposition is to be referred to a debilitating and septic influence acting upon the system at large; to counteract which it behoves the medical practitioner to advise such hygienic and therapeutic means as will maintain that equilibrium of function which constitutes health. A strong argument in favour of the antiseptic power of benzoic acid, or rather of hippuric acid, is deduced from the fact that the urinary secretion, a secretion above all others prone to rapid spon-

* Albumen is more or less intimately connected with most of these deposits. It has a great affinity for the phosphate of lime in the degree of saturation which characterizes the phosphate as bone-earth; and combines with it in variable proportions, forming compounds insoluble in water. Some chemists have found from 8 to 9 per cent. of phosphate in the albumen of the serum of the blood (Berzelius, Traité de Chimie, tom. iii. p. 516, Bruxelles, 1839). In order to determine the action of hippuric acid upon an insoluble compound of this nature, the following line of investigation was adopted. To a portion of the filtered white of egg diluted through water, a few drops of caustic ammonia, and then a little phosphate of ammonia, were added; into the mixture a small quantity of a solution of chloride of calcium was slowly dropped, as recommended by Berzelius. The resulting precipitate being well washed, and dried at a low temperature, appeared as a semi-transparent horny-looking substance, composed of 52 per cent. of bone-earth and 48 of albumen. A small quantity of this being treated with boiling distilled water, formed a kind of coagulum; and upon testing the water afterwards for lime, not a trace could be detected. On adding, however, a little hippuric acid to the water, and allowing it to digest at a moderate warmth along with the albuminous compound, the coagulum ere long broke down, a portion of the albumen seemed to dissolve, as did the phosphate of lime, for a copious white cloud ensued upon the addition to the filtered liquor of a solution of oxalate of ammonia. The presence of phosphoric acid was proved by nitrate of silver.

taneous putrefaction, remains untainted for days, and sometimes even weeks, when this acid is one of its component parts.

13, Charlotte Street, Bedford Square,
January 31st, 1843.

FATAL HÆMORRHAGE FROM SWALLOWING A NEEDLE.

To the Editor of the Medical Gazette.

SIR,

IF the following case be worthy of a place in your valuable periodical, by inserting it you will oblige, sir,

Your most obedient servant,
JOSEPH BELL.

Barrhead, Jan. 31st, 1843.

Hugh Allen, æt. 18 years.—Nov. 30th, 8 o'clock, A.M., I was called hurriedly to visit this patient, but found him dead when I reached his residence. The surface of the body was perfectly exsanguineous, and blood was issuing from nostrils and mouth. His mother stated that, about ten days before, on eating some oatmeal porridge, he had swallowed some sharp substance, which he thought was a pin, and which he felt sticking in his throat. Since that time he had experienced considerable uneasiness in right side of throat. Yesterday, about 6 o'clock P.M. he commenced to spit some blood, which he continued to do occasionally until about 11 o'clock, when he spat up about a soup-plateful. After this he got some sleep, but continued to spit up occasionally mouthfuls of blood. At 7 o'clock this morning he vomited a large quantity, and expired in a few minutes.

Post-mortem Examination (Dec. 2d, 11 o'clock, A.M.).—Surface of body pale; no appearance of the commencement of putrefaction. The muscles of neck and chest well developed, and of a pale appearance; there was some emphysema of the cellular tissue about neck. The larynx and trachea were filled with clotted blood, but no abnormal opening could be detected in their walls. On examining the œsophagus, it was found transfixed, opposite the middle of the thyroid cartilage, by a fine sewing needle three inches long. The point of the needle was lying in contact with the right common carotid artery; at this point the walls of the

vessel were destroyed, and a considerable opening made into the vessel, which opening communicated with the œsophagus along the course of the needle. Around the opening into artery, to the extent of an inch and a half, the external coat was completely destroyed, and only a few fibres here and there of the middle one remaining; the internal coat was of a dark inky hue, and quite rotten. Between the inner side of artery and the œsophagus and trachea there was about, perhaps, an ounce of purulent matter mixed with blood. The bronchial tubes were filled with blood, which, on pressing the chest, run out copiously. The ramifications of the air-tubes and substance of both lungs, particularly that of right side, were packed up, as it were, with dark blood, partly clotted, and partly fluid; in fact, there was not a single spot of right lung free from it. The cavities of the heart were empty. The pericardium contained about an ounce of serum.

The stomach was distended with dark coagulated blood, a considerable quantity of which was also found in the duodenum.

The only comment which I deem necessary to make on the above lamentable case is, the importance which should be attached to the lodgment of sharp bodies about the region of the neck, and the propriety of having them extracted as soon as possible, where such removal is at all practicable. Had the needle been removed in this case immediately after it was swallowed, the life of the unfortunate individual would have been, in all probability, saved. It is not likely that any serious injury had been sustained at the time the accident occurred. It is true, that the artery may have been pricked by the point of the needle at the time it was swallowed, and that the blood which issued from it may have originated the abscess, but I am inclined to think that the suppuration was induced by the presence of the needle, and that the coats of the artery, as well as the cellular tissues surrounding it, were destroyed. At all events, the early extraction of the needle would have given the patient the best chance of escape, but unfortunately for himself he neglected to consult any professional person respecting the matter; he and his friends deeming the accident to be of very trifling moment.

ON THE
PATHOLOGY OF FEVER AND
ANALOGOUS DISEASES.

To the Editor of the Medical Gazette.

SIR,

Is perusing that complete system of practical and theoretical medicine, Dr. Watson's lectures, as published in the volumes of your valuable journal for 1841-42, I was particularly struck with the views of that enlightened physician on the subject of the febrile exanthemata and their allies. The doctor warmly espouses that modified humoral pathology current with the most eminent medical authorities of the day.

In the course of farther investigation of this interesting subject, I accidentally encountered an article on organic tissues, by Mr. Coventry, of Bicester*, on some points of which I intend to make a few comments; not that the writer has furnished much material for this purpose, but from a firm belief of the importance of the subject, and a desire for farther development of views then merely announced, but which I nevertheless believe to be correct.

In the article alluded to, Mr. C. advances four distinct opinions on the pathology of the diseases in question.

First, that fever, whether *continued*, *intermittent*, or *eruptive*, is *essentially* a blood disease.

Second, that the condition of blood on which these disorders depend is "excess of oxygen."

Third, that the cause of this hyperoxidation is functional derangement of the blood-vessel.

Fourth, that this functional disturbance is caused by the vital action of a parasitic formation appropriating the carbon of the blood, and thus preventing the change of matter and giving rise to the excess of oxygen in the system.

Let us inquire *seriatim* how far these views are supported by the soundest writers on the subject.

First, that fever is a blood disease. But for the subsequent date of the lectures referred to, I should have suspected the author of the paper on organic tissues of promulgating a plagiarism.

Dr. Watson states* that the exciting

cause of fever is a specific poison introduced into the blood, of which the first evidence is *nervous depression*,—what Dr. Armstrong calls the stage of *apparent debility*, and which Mr. Coventry classes with that collapse of system constituting the first effects of the shock of any noxious agent on the system, such as accident, mental emotion, &c. Again, Dr. Watson (lect. cit.), after stating death by coma to be the most frequent form of dissolution in fever, states, that "the fact of stimulants relieving the comatose symptoms, and post-mortem results affording no evidence of their causing inflammation, clearly shows that the coma depends on some other cause than mechanical pressure, and that the cause is supplied by the poisoned blood." I need scarcely urge the importance of this in diagnosis. Indeed, a conviction of the beneficial results that may accrue to suffering humanity from the application of these principles, must be my apology for reproducing what has once been submitted to the medical public.

Second, "That this condition of blood is excess of oxygen." "So I find," says Liebig, "but the excess of oxygen depending on a very different state of the system to what is assumed by the article in question." "Fever depends on an abnormally increased change of matter, in which we know oxygen is the main agent, producing an increase of all the motions, more force than the nerves can either carry away by mechanical motion, or equalise by conduction." * * * *

"In consequence of the accelerated circulation in the state of fever, more arterial blood, and therefore more oxygen, is conveyed to the diseased part, and all others." * * * *

"In fever there is a feebleness of resistance on the part of the vital force to the action of oxygen, and therefore a more rapid transformation of matter than in health." * * * *

All the curative means, therefore, are directed to exalt the resistance of the vital force to the chemical action of oxygen—diminishing the resistance of the vital force of other parts by artificially exciting disease in them. By blisters, &c. diminishing the number of oxygen-carriers (blood-globules), by blood-letting, &c., or if the brain be more especially the subject of over-rapid transformation, surrounding it

* Vide MEDICAL GAZETTE, No. 49, p. 42.

* Ibid. August, 5, 1842.

with ice and cold evaporating solutions." (Liebig—Organic Chemistry).

Third and fourth, That the cause of the above condition is functional derangement of the blood-vesicle depending on the vital action of a parasitic formation. In Dr. Watson's lecture* introductory to the exanthemata, he says, "all these diseases are contagious, and to say a disease is contagious is the same thing as to say that it is produced by an animal poison decomposing the blood," and (if its elements be contained under some other form of vital combination doubtless forming a more complex organic molecule in the blood) reproducing itself from that fluid as yeast reproduces itself from saccharo-glutinous solutions.

"The virus of contagious exanthemata," says Dr. W., "is formed out of the blood, from a constituent analogous to itself, existing in that fluid (as gluten in a state of transformation imparts that state to the wort which contains its elements)."

Doubtless here, also, the complex molecule representing this excitator of fermentation possesses a lower degree of vitality than that representing "gluten."

Thus, the products of these transformations, fermentation and putrefaction, represent a descending series; starch, gluten, and sugar, forming the subject of the elements of organic life, alcohol of organic, and carbonic acid of inorganic chemistry.

But this by no means excludes the idea that the blood of the first subject of a febrile exanthem might have acquired, together with its fermentative quality, the morbid property of engendering a parasitic formation, nourishing and reproducing itself, according to the laws of animalcular life, having run its course in the first, and becoming transmissible to the blood of others, either by contact or atmospheric agency.

But Dr. Watson's remarks—take no account of the concomitant and invariable production of animalcular life, during the fermentation of vegetable infusions, still, that these are concurrent phenomena, is testified by the researches of the minutest investigators. This elevates the processes of fermentation and putrefaction above those of mere organic chemistry (applying

the term according to the distinction established by Mr. Ancell), bringing them within the pale of the chemistry of organic life. Farther, as in putrefaction animal infusoria are invariably produced, so, in fermentation, germs are engendered; of which Mr. Coventry cites the *toruli cerevisiæ* as an example.

Finally, I consider that the remarks have an important pathological bearing, inasmuch as if the doctrine of a *contagium animatum* be true, the diseases in question rank amongst purely vitalised processes, whilst the contrary tends to reduce them to the level of common chemical actions.—I am sir,

Your obedient servant,

HENRY C. RAMSEY.

London, Feb. 2, 1843.

MELANOID TUMOR OF THE EYE.

To the Editor of the Medical Gazette.

SIR,

In your journal for Dec. 2d, 1842, I related an interesting and rare case of melanoid tumor, arising from the outer part of the cornea and sclerotic of the eye, which tumor I removed by operation on the 18th of November.

I am happy to be able to state, that the progress of the case since has been most satisfactory. Not a single bad symptom made its appearance after the operation; and on the seventh day the patient left her bed-room, and was able to bear the light without inconvenience.

I was apprehensive that the disease might return, but as yet there is no symptom of such an occurrence. There is no opacity of the cornea in the situation of the wound, although a fair slice of that tunic was removed. All the blood-vessels which ran into the tumor from the external canthus, and formed a net-work on the sclerotic, have disappeared; and with the exception of a single minute point at the junction of the cornea and sclerotic, it would be difficult to discover that the eye had ever been otherwise than healthy. The vision is excellent; indeed, the patient says that now that eye is the best of the two.

The result of this case is satisfactory in every point of view. It is an encouragement to attempt the minor operation in similar cases, before submit-

* Vide MED. GAZ. July 29, 1842.

ting the patient to the formidable alternative of having the globe removed, or permitting the eye to be destroyed by the uninterrupted progress of disease. It also shews that melanosis may sometimes be extirpated, although, as in this case, the prognosis was unfavourable; and therefore affords a useful and instructive lesson.

I have reason to hope, from the manifest improvement which has taken place in the patient's health since the operation, together with the gratifying condition of the eye, that she may be so fortunate as to recover entirely from the frightful disease with which she was threatened.—I am, sir,

Your obedient servant,

WM. WHITE COOPER.

308, Regent Street,
Feb. 5, 1843.

ON THE POSTERIOR DIVISIONS OF THE SPINAL NERVES.

By GEORGE VINER ELLIS,

One of the Demonstrators of Anatomy in
University College, London.

(For the *London Medical Gazette*.)

AMONGST anatomical writers there is much difference in the description of the posterior divisions of the spinal nerves, in consequence of a uniform arrangement not having been observed. Without specifying the opinions of authors, it will be sufficient to state, that in the neck and sacral region each posterior division is said to be a single trunk, from which spring muscular and cutaneous nerves; whilst in the back and loins each is divided regularly into an external and an internal branch. By dissection I find the same type of distribution, by an internal and external branch, in all the nerves, with some exception at the extremities of the spinal canal.

From the ganglia of the spinal nerves the anterior and posterior divisions have their origin; the anterior being distributed to the parts in front of the vertebral column, and the posterior to the muscles and integument of the back. As a general rule, the posterior division of a cervical, dorsal, lumbar, or sacral nerve, has both an external and an internal branch. This regular branching exists through the extent of

the multifidus spinæ muscle along the vertebræ; so that the posterior portion of the first cervical, or the sub-occipital nerve, which is higher than the multifidus, and the corresponding parts of the two lower sacral and the coccygeal nerve, which are below the muscle, want that mode of distribution.

In the *cervical nerves* the external branches spring from the posterior divisions close to the posterior inter-transverse muscle, and are distributed altogether to the splenius cervicalis ascendens, and the united transversalis colli and trachelo-mastoid muscles. The internal branches, much the largest, besides supplying the muscular mass on the sides of the spinous processes, which consists of the multifidus spinæ, semi- and inter-spinales, gives cutaneous nerves from the four highest. The suboccipital, as before said, is not included in the enumeration, and the external branch of the second nerve differs slightly from the rest.

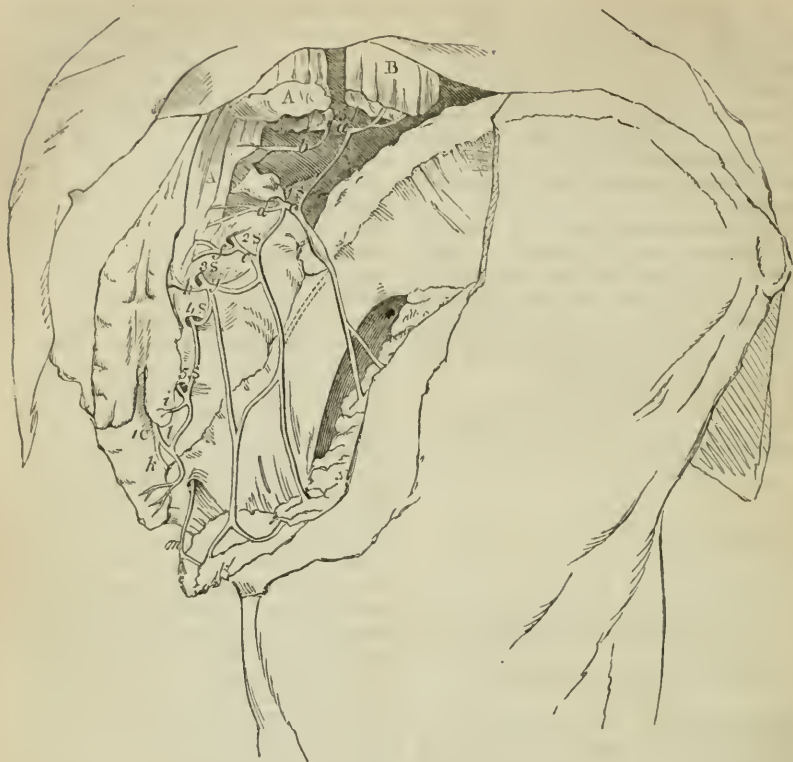
The posterior divisions of the *dorsal nerves* divide, as commonly described, into external and internal branches. The internal penetrate the multifidus spinæ and semi-spinales muscles, and give cutaneous nerves from the six upper. The external branches enter the erector spinæ and levatores costarum, whilst cutaneous portions spring from about the six lower nerves.

In the *lumbar nerves* there are also similar internal and external branches. The internal* end in the multifidus spinæ muscle; and the external branches, giving cutaneous nerves from the three upper, terminate in the erector spinæ muscle. From the external branch of the fifth, or last lumbar, is a descending filament to join the first sacral nerve.

The bifurcation of the posterior divisions of the *sacral nerves* into internal and external branches, is found only in the three upper, or in those beneath the multifidus spinæ, for this muscle does not cover the fourth aperture in the sacrum. See the wood-cut.† The in-

* Cruveilhier denies even the presence of these branches.—*Anatomie Descriptive*, t. iv.

† The drawing, for which I am obliged to Mr. N. Brangwin, represents the posterior divisions of the sacral nerves. The multifidus spinæ A, is removed from the sacrum, but a portion is left along the middle line to shew the internal branches entering it. The erector spinæ B, and the gluteus maximus, have likewise their origins separated from the bones.



Explanation of the Figures and Letters.

5 *l*, fifth lumbar nerve; *a*, external; *b*, internal branch; 1 *s*, first sacral nerve; *c*, external; *d*, internal branch; 2 *s*, second sacral nerve; *e*, external; *f*, internal branch; 3 *s*, third sacral nerve; *g*, external; *h*, internal branch; 4 *s*, fourth sacral nerve; 5 *s*, fifth sacral nerve; *i*, branch on the sacrum; 1 *c*, first coccygeal nerve; *k*, anterior; *l*, posterior; *m*, cutaneous nerve from the anterior divisions of the last sacral and the coccygeal nerve; *aa*, multifidus spinæ muscle; *b*, erector spinæ detached from innominate bone.

ternal branches of the three upper nerves are small, and enter the multifidus spinæ, though I have followed to the surface a filament of the one from the hind nerve. The external branches of the same nerves, the largest, become cutaneous. Placed at first beneath the multifidus spinæ, they are united on the back of the sacrum with each other, also with the external branch (*A.*) of the last lumbar, and with the fourth sacral nerve (4 *s.*) by a series of anastomotic arches, in a line with similar loops between the coccygeal and last two sacral nerves. The same branches are then directed outwards over the sacrum to the cutaneous surface of the great sacro-sciatic ligament, where a second communication takes place between them. From this second junction

or *plexus* beneath the gluteus maximus muscle, are given usually three cutaneous nerves to the integument of the buttock: all these perforate the gluteus; one being found near the posterior superior spine of the innominate bone, another, the largest, near the end of the sacrum, and the remaining one being intermediate between the other two. Sometimes the external branch of the first sacral is not united in the outer plexus, as in the drawing, but if it were, its position and junction would be marked by the dotted lines. By the side of the coccyx are one or two other cutaneous nerves of the buttock, derived from the common trunk of the anterior divisions of the last sacral and the coccygeal nerve. One of these is marked (*m.*) in the drawing.

The posterior divisions of the last two sacral nerves (4 s. and 5 s.), and of the coccygeal nerve (l. 1 c.) are united only by communicating branches; and in this body the nerve joining the last sacral and coccygeal supplies a filament to the back of the sacrum. Occasionally there is a branch from the fourth sacral to the plexus beneath the gluteus muscle.

The *coccygeal nerve* (1 c.) leaves the spinal canal by the large inferior aperture, and presents an anterior and a posterior division. The posterior division joins in an arch with the similar part of the last sacral; and the anterior, (κ.) perforating the great sacro-sciatic ligament and coccygeus muscle, joins the anterior division of the last sacral nerve. Schlemm has found sometimes a second coccygeal nerve.*

ON THE PREVENTION OF SCURVY IN PRISONS, PAUPER LUNATIC ASYLUMS, &c.

By WILLIAM BALY, M.D.

Physician to the General Penitentiary, and Lecturer on Forensic Medicine at St. Bartholomew's Hospital.

(For the Medical Gazette.)

THE object of this communication is to direct attention to the powerful antiscorbutic properties of the potatoe, and to its importance as an article of diet in prisons, workhouses, pauper lunatic asylums, and similar institutions.

That potatoes in the raw state are useful in curing scurvy, has been frequently observed. Sir Gilbert Blane,† in his account of the "Diseases of the Fleet in 1781," mentions that "raw potatoes had been used with advantage, particularly by Mr. Smith, of the Triton, who made the scorbutic men eat them, sliced with vinegar, with great benefit;" and M. Julia Fontenelle‡ relates that "in the West Indies sailors had been cured of scurvy by the long-continued use of potatoes, baked as slightly as possible under the ashes, and eaten without salt." Dr. Budd, in his excellent article, "Scurvy,"§ remarks that "potatoes, when raw, seem to be antiscorbutic; and, in confirmation of this, he refers to the observation of Sir

G. Blane, above quoted. But the value of the potatoe as an antiscorbutic vegetable, is greatly increased by the fact, which I shall endeavour to demonstrate, that its efficacy is not, as has been supposed, essentially impaired by the boiling heat,—that, *as ordinarily cooked, it is an admirable preservative against scurvy*. Raw potatoes are too nauseous to be generally used for this purpose; while green vegetables are, at least in winter, comparatively costly, and, therefore, are often supplied by economical guardians of criminals and paupers, in quantities inadequate to the maintenance of health. But potatoes, when cooked, are in every respect an excellent article of food, and are likewise cheap and abundant at all seasons of the year.

These considerations, and the knowledge that scurvy still occurs too frequently in our own gaols, induce me to publish the following facts.

In the spring of 1840, I found that scurvy was a disease of rather frequent occurrence amongst one class of prisoners in the Milbank Penitentiary, the military offenders sentenced by court-martial; whilst amongst the other, more numerous class of inmates, the convicts, it was never seen. This circumstance led to a comparison of the dietaries in use for the different classes of prisoners; when it appeared, as was to be anticipated, that the military offenders were fed upon a diet nearly destitute of succulent vegetables, whilst the convicts received a liberal supply of that kind of food.

The following was the weekly diet scale for the military offenders.

Period of imprisonment.	First 3 Months.	Second 3 Months.	Over 6 Months.
Bread	10½ lbs.	10½ lbs.	10½ lbs.
Meat	12 oz.	18 oz.	24 oz.
Gruel	17 pints	15 pints	14 pints.
Rice soup without vegetables	2 pints	2 pints	2 pints.
Pea soup with vegetables	—	1 pint	1 pint.
Potatoes	—	—	½ lb.

The weekly diet scale for the convicts, from the commencement of their imprisonment, was as follows:—

* See *Observationes Neurologicae*. Berlin, 1834.

† *Diseases of Seamen*, 3d edit. p. 39.

‡ *Journal de Chimie Médicale*, t. iii. p. 873.

§ *Library of Medicine*, vol. v.

	Men.	Women.
Bread . . .	11 lbs.	8 lbs. 10 oz.
Meat . . .	20 oz.*	16 oz.
Cheese . . .	4 oz.	4 oz.
Gruel . . .	11 pints	7 pints.
Broth . . .	3 pints	—
Milk . . .	—	5½ pints.
Peasoup, with } vegetables. }	1½ pint	1 pint.
Potatoes . .	5 lbs.	5 lbs.
Onion . . .	1	1.

Nearly all the cases of scurvy occurred in soldiers who were passing through the second three months of their confinement in the Penitentiary. During this period of their imprisonment, as the tables above given shew, not only had the soldiers very nearly as ample a supply of animal food as the convict prisoners, male as well as female, but they had as much soup, seasoned with vegetables, as the female convicts, who although undergoing far longer terms of imprisonment, yet were free from scurvy. This exemption of the convicts from the disease could, therefore, only be attributed to their weekly diet containing 5 lbs. of potatoes and an onion. In order to afford a more abundant supply of vegetable food to the military prisoners, the readiest method seemed to be the substitution of pea-soup, with vegetables, for the rice soup, which was destitute of fresh vegetables. This change was made at my suggestion during the winter of 1840-41. The quantity of soup containing succulent vegetables was, for this class of prisoners, increased to three pints weekly, a larger quantity than the convicts received. Yet scurvy still made its appearance amongst them. During the year 1840, nine soldiers suffering from scurvy had been admitted to the Infirmary; in the course of 1841, ten were admitted to the Infirmary, affected with the same disease. In both years some slighter cases were treated in the wards of the prison. The disease, therefore, prevailed to nearly, if not quite, the same extent, after the change of diet as before. It was now evident that the quantity of vegetables ordinarily contained in two

or three pints of pea-soup was inadequate, when given weekly, to prevent the development of scurvy; and accordingly I recommended that the soldiers, as well as the convicts, should have an allowance of 1 lb. of potatoes with each dinner of meat; in other words, that they should have 2 lbs. of potatoes weekly during the first three months of their imprisonment, 3 lbs. during the second three months, and 4 lbs. after the expiration of six months. This addition to the dietary of the military prisoners was made in January 1842, and not a single case of scurvy has since occurred.

A fact in the earlier history of the Penitentiary affords corroborative evidence of the influence of the potatoe in preserving the body from scorbutic disease. The severe epidemic which raged at the Penitentiary in 1823, and which has been so graphically described by Dr. Latham*, was characterised by scurvy as well as dysentery. The development of this epidemic dated its commencement from a change in the dietary of the prisoners, effected in July 1822, by which the quantity of the vegetable as well as the animal food was much reduced.

The dietary, previous to July 1822, was, for the week, as follows:—

	Men.	Women.
Bread . . .	19½ lbs.	7 lbs. 14 oz.
Meat . . .	24 oz.	24 oz.
Soup, with } vegetables }	6 pints	4½ pints.
Broth . . .	2 pints	2 pints.
Gruel . . .	14 pints	14 pints
Potatoes . .	6 lbs.	7 lbs.

The reduced dietary consisted of 14 pints of soup, made with peas, one ox-head to 100 prisoners, and vegetables; 7 pints of gruel; and 10½ lbs. of bread for the men, 7 lbs. 14 oz. for the women. Here, then, there was an increase in the quantity of the vegetables which went to form the soup; but the potatoes were wholly omitted.

Hitherto, scurvy had never shown itself in the Penitentiary; but in the autumn succeeding this change in the dietary, "the health of the prisoners began visibly to decline. They became

* In the course of the year 1840, the allowance of meat to the males was increased to 25 ounces weekly.

* Account of the Disease lately prevalent at the General Penitentiary. London, 1825.

pale and languid, and thin and feeble." About the beginning of February 1823, thus six months after the reduction of the dietary, marks of scurvy were very generally observed; and at the commencement of March, Dr. Latham found more than one half of the whole number of prisoners (858) affected by it. It is, I conceive, unnecessary to argue that the want of animal food could not have produced the scurvy: to all persons who have doubts on this point, I would recommend the perusal of Dr. Budd's treatise; but I wish to point out that the new dietary was not deficient in vegetable constituents, except as regarded the potatoes, and that the withdrawal of the supply of potatoes was, in all probability, the cause of that part of the epidemic which was constituted by the scurvy.

The disease was quickly dissipated by the treatment adopted by Dr. Latham and Dr. Roget. Three oranges were ordered daily for each prisoner, besides nutritious food. At the examinations of the prison between the 12th and 19th of March, the general aspect of the prisoners was found visibly improved. On the general surveys of the prison between the 31st of March and the 4th of April, not more than 50 individuals of both sexes could be found in whom any marks of scurvy remained, and on the greater number of these they were so slight as hardly to be detected. The diet of the convicts has, since this period, contained an abundant supply of potatoes, and scurvy has never again attacked them; although other forms of disease, which were described as parts of the epidemic of 1823, namely, the fever, dysentery, and nervous affections, have frequently reappeared.

The statements recently published in the newspapers, showing the prevalence of scurvy in many county gaols at the present time, have led me carefully to examine the Reports of the Inspectors of Prisons, with the view of ascertaining how far the disease in these establishments depended on deficiency of vegetables, and especially potatoes, in the diet furnished to the inmates. The following are the results of this investigation.

In the seven Reports of the Inspector of Prisons for the Southern and Western District, only two prisons are described in which sea-scurvy appears to have

distinctly shown itself. These are, the Oxford County Gaol, and the Northampton County Gaol. The occurrence of scurvy in the former prison is mentioned in both the 4th and the 7th Report. The diet of the prisoners consisted of 10½ lbs. of bread, 14 pints of gruel, and from 4 to 12 oz. of meat weekly, with no regular allowance of vegetables; "potatoes or green vegetables being given only occasionally on Sundays, when the prison garden would furnish them." Scurvy prevailed in the Northampton County Gaol at the time of the publication of the 3d Report; and the diet then consisted of bread, soup, and gruel. The 5th Report announces that the scurvy had disappeared; and the accompanying tables show that 4 lbs. of potatoes weekly had been added to the dietary.

In the earlier Reports of the Inspectors for the Home District, scurvy is mentioned as prevailing to some extent in seven prisons, namely, the Cold-bath-fields House of Correction, the Horsemonger-lane County Gaol, the Bedford County Gaol and House of Correction, the Springfield and Hertford County Gaols, and the Ilford House of Correction. In all these prisons the diet contained no potatoes, and little, if any, succulent vegetables of other kinds. In the Bedford County House of Correction, scurvy (*petechiæ*) was very recently (see 6th Report) still prevalent; and the ravages of the disease in the Springfield Gaol became the subject of special investigation only a few weeks since.

Among the prisons of the Northern and Eastern District, there are twelve in which scurvy is stated, in some or other of the Inspectors' Reports, to have been a disease of common occurrence. These are the County Gaols or Houses of Correction at Cambridge, Huntingdon, Norwich, Swaffham, Walsingham, Wymondham, Ipswich, Bectles, Wakefield, Falkingham, Lincoln, and Kesteven. The diet in all these prisons, when scurvy prevailed in them, was characterized by the same deficiency of vegetables. In the Cambridge County Gaol (3d Report), 3 lbs. of potatoes have been added to the weekly allowance of food; and in the Walsingham and Ipswich Gaols (7th Report), an addition of 7 lbs. of potatoes weekly has been made. From these prisons

scurvy has disappeared. In the Wakefield House of Correction, the allowance of potatoes or other vegetables was $\frac{3}{4}$ lb. weekly (2d Report); and scurvy then became prevalent. Now, the weekly diet scale comprises 3 lbs. of potatoes, besides the smaller quantity of vegetables contained in three pints of soup, and one pint and a half of onion porridge; and scurvy is not met with. At the Huntingdon Gaol, the diet, which hitherto consisted of 14 lbs. of bread, 10 pints of milk porridge, and 4 pints of soup, made of meat and vegetables, has been improved by the addition of solid meat; but no increase appears to have been made in the vegetable portion of the diet. The last Report of the Prison Inspector mentions that scurvy still occurs.

Many of the prisons of the Northern and Eastern, and Home Districts, in which the earlier Reports of the Inspectors stated scurvy to be a frequent disease, would appear, from the absence of all mention of that disease in the later Reports, to have become free from its occurrence, although no change in the dietaries, adequate to account for such a result, has taken place. There are, however, several reasons capable of explaining this circumstance, so as to leave quite unweakened the position that potatoes or other succulent vegetables are articles of food necessary for the preservation of health. In their first Reports, the Inspectors have given very minute and valuable details respecting the health of the different prisons they visited. Subsequently, they have for the most part recorded only statistical facts respecting the amount of sickness and mortality; and, except where any extraordinary unhealthiness has prevailed, have not again mentioned the prevalence or absence of particular diseases. In many instances, too, the surgeons of the prisons, unless questioned on the very point, would be silent as to the occurrence of scurvy; for this disease, though a very serious one when fully developed, can seldom affect, at one time, very many of the inmates of a county prison. The terms of imprisonment which the criminals in these prisons undergo are generally under three months, while from three to six months' restriction to a diet deficient in succulent vegetables is required for the complete manifestation of scurvy, though the premonitory debility

and sallowness show themselves earlier. Hence, independently of the disease being regarded as discreditable to the establishment in which it occurs, it would often be thought by the surgeon unworthy of special mention in his communications with the Inspector. That this is really the case I have sufficient proof. At one county gaol which I visited last summer the surgeon informed me that scurvy affected those prisoners who had long been in confinement; yet, as these cases were not very numerous or severe, the fact had not been stated in the Inspectors' Reports. The diet here comprised sixteen ounces of meat, six ounces of cheese, seven pounds of bread, and two pints of gruel, but no potatoes, or other succulent vegetables, the absence of which was its sole defect. The occurrence of scurvy amongst the military prisoners in the Penitentiary, likewise, has never been mentioned in the official reports. There is a third cause, however, to which I doubt not the silence of the later Prison Reports, respecting the presence of scurvy in several prisons where the dietary is still deficient in vegetables, must in part be ascribed. This is the vigilance exercised by the surgeons of the respective gaols in observing the health of the prisoners, and in detecting the first signs of considerable debility, for which it is their custom to order extra diet, generally consisting of meat and vegetables. Such I believe to be the case, especially, in several important prisons of the Home District.

The facts, then, which I have been able to extract from the Reports of the Prison Inspectors powerfully corroborate the results of my own experience as to the value of potatoes in preventing scurvy. Wherever this disease has prevailed, there the diet of the prisoners, though often abundant in other respects, has contained no potatoes, or only a very small quantity (as at Wakefield). In several prisons the occurrence of scurvy has wholly ceased on the addition of a few pounds of potatoes being made to the weekly dietary. The circumstance that the Reports make no mention of the prevalence of scurvy in certain prisons, where the nature of the food would lead us to expect it, I have shown to be capable of explanation. I shall only add, that there are many prisons in which the diet, from its unvaried character and the absence of

animal food, as well as green vegetables, is apparently most inadequate to the maintenance of health; and where, nevertheless, from its containing abundance of potatoes, scurvy is not produced. Stafford County Gaol may be taken as an example. In this prison the weekly allowance of food consists of twelve pounds and a quarter of bread, twenty-one pints of gruel, seven pounds of potatoes, and a sufficient quantity of salt. Neither meat nor soup is tasted by the prisoners: yet scurvy does not occur. I have recently had the opportunity of examining seventy prisoners who had been confined in Stafford Gaol for periods varying from three to six months; and I could not find one who presented any trace of scorbutic disease.

The foregoing facts obviously admit of an important practical application. Other succulent vegetables being comparatively expensive, and their supply uncertain, potatoes (to the amount of from three to six pounds weekly) ought to form part of the dietary of all prisons, workhouses, pauper lunatic asylums, and similar institutions, where the food of the inmates is regulated by principles of strict economy. This is already very generally the case. But, besides the instances to the contrary already adduced from the Prison Reports, I may mention that the magistrates of the City of London have recently excluded from the dietary of the prisons under their jurisdiction potatoes and all succulent vegetables, with the exception of the small quantity contained in a pint or two pints of soup allowed weekly. This I cannot but regard as a dangerous experiment. Scurvy has been a frequent disease in lunatic asylums, and still is so in British merchant vessels. In both its occurrence might, without difficulty, be wholly prevented. In the navy, the ships, before putting to sea, are always provided with a sufficient quantity of lemon-juice; but in the merchant-service this is too often neglected, to avoid expense perhaps as well as trouble. Potatoes, since they would serve for food, while they preserve the health of the sailors, if not too bulky, might be preferred by many ship-owners.

A glance at the chemical analysis of the potatoe at once explains its antiscorbutic virtue. The various fruits, succulent roots and herbs, which have the property of preventing and curing scurvy,

all contain, dissolved in their juices, one or more organic acids—such as the citric, tartaric, and malic acids. Sometimes these acids exist in the free state, but more generally they are combined with potash or lime, or with both these bases. Now potatoes have been submitted to most elaborate chemical examination by Einhoff and Vauquelin; and by both these chemists they have been found to contain a vegetable acid in considerable quantity. According to Einhoff*, this acid is the tartaric combined with potash and lime. According to Vauquelin† it is the citric, partly in combination with those bases, and partly in the free state. The farinaceous seeds, as wheat, barley, oats, and rye, which are destitute of antiscorbutic property, contain no organic or vegetable acids.

CASE OF MALIGNANT TUMORS,

EXTERNAL AND INTERNAL.

By JOHN PERCY,

Physician to the Queen's Hospital, Birmingham.

(For the *London Medical Gazette*.)

T—C—, admitted Jan. 27, 1842, into the Queen's Hospital; æt. 64, of robust frame. He had been an extensive farmer in L—, but owing to extravagance and dissipation was now reduced to poverty. His constitution, as I learnt from an authentic source, was shattered by venereal excess; and a scar was found in the left groin. His health has been gradually declining for some months, and his chief complaint now is of loss of appetite and increasing debility. He suffers no pain. He is troubled with an occasional hacking cough, which he attributes to a recent cold. There is a tumor of the size of an ordinary orange, painful on pressure, and of cartilaginous hardness, attached to the sternal extremity of the right clavicle, and apparently connected with the sterno-clavicular articulation. He assures me that this tumor has been produced entirely during the last three months. There is also a similar, though smaller tumor, connected with the fourth rib of the same side, and about three inches from the centre of the sternum; he had not himself detected this tumor. I afterwards discovered another large and similar tumor in the right axilla. I was also, at a subsequent period, informed that some years ago a tumor had been removed from his chest at Bath. I examined the chest with care, but could not detect any decided evidence of disease either

* Gehlen's Journal, Bd. iv. p. 455.

† Journal de Physique, t. LXXXV. p. 113.

in the lungs or heart, the sounds of which, however, were more feeble than in health. Once or twice during the progress of the case I thought I could hear a slight bruit with the first sound. The pulse was peculiar; it occasionally intermitted, and had, if I may be allowed the expression, a yielding jerk, as though the artery were not fully distended with blood; and this jerking character it maintained almost during the whole course of his illness. The tongue is coated with white moist fur. The urine has a natural appearance, and contains no albumen. The countenance is pale, and has a wan dejected expression; and, when I alluded to his former condition of life, he burst into tears.

A variety of medicines were prescribed without any very decided relief. A combination of a stimulating expectorant, diffusible stimulant, and tonic, appeared to me most eligible; due attention at the same time being directed to the state of the bowels, which were often constipated, and required to be moved by castor oil or colocyath. Iron and quinine, together with beef-tea and wine, were ordered during the progress of his disease. Tincture of iodine was applied to the tumors. However, in spite of treatment, the debility continued to increase; diarrhoea alternated with constipation; the prostration of strength became extreme; the lower extremities were paralytic; fæces and urine were passed involuntarily, and the patient at length expired at half-past ten P.M., Feb. 23. Consciousness continued to the last, and for some days previous to his death he expectorated purulent matter. The tongue became brown, furred, and dry. Under the influence of sulphate of quinine and dilute sulphuric acid, ale, wine, and nutritive animal food, the patient for some days appeared to rally, and the tongue became white and moist. However, this temporary improvement was soon followed by rapid exhaustion. Considerable drowsiness, amounting almost to stupor, was occasionally observed. The tumor connected with the right clavicle ceased after the lapse of some time, to be painful on pressure.

Sectio, in the morning of the 26th:—

Head.—Membranes of the brain pale; slight effusion at the base; no morbid appearance.

Chest.—Lungs did not collapse; considerable congestion. A section presented the appearance of softened spleen. At the lower and anterior part of the right lung, immediately beneath the pleura, was a tumor of the size of a walnut; and in the substance of both lungs were found several collections of matter, similar in appearance to that of which the external tumors were composed, and varying in size from a pea to a walnut. In several of these collections degeneration had occurred, and offensive

purulent matter, the result, had escaped into some of the larger bronchial ramifications. Many of the bronchial glands seemed to have undergone similar degeneration. Beneath the pleura in several places, bony matter was deposited in the form of arborescent spiculæ.

The heart was large, pale, and flabby. Polypous concretions of fibrin were contained in the cavities. The aorta was much dilated, and on its internal surface were small hard patches. All the valves were in a healthy state. There was no hypertrophy.

Abdomen.—Stomach and intestines pale and distended with flatus. A tumor of the size of a small orange, and of the same character as those already described, was attached to the gastro-hepatic omentum. The left kidney also contained several smaller and similar tumors; and on making a section, it was found to consist almost entirely of softened white matter. Other viscera healthy.

The external tumors were all intimately connected with the subjacent bone, which was cellular and easily friable under the finger; and that in the exilla embraced to a considerable extent the anterior edge of the scapula. The surface of all the large tumors was distinctly and irregularly lobulated. Their substance was dense, and composed of irregular masses separated from each other by fibrous or dense cellular tissue. Their colour was white, with a pale fleshy tinge. I cut the central part of the axillary tumor into thin slices, and carefully pressed them between bibulous paper in order to remove the excess of moisture. 57·7 grains thus pressed, left, after drying at the temperature of 212° F., 11·1 of solid matter, brown, brittle, and resembling dried fibrin; it dissolved in hydrochloric acid with the production of the brownish-blue colour of fibrin similarly treated. 79·6 grains freed from excess of moisture by pressure between bibulous paper, left, after incineration, which required to be aided by nitrate of ammonia, 1·0 grain.

OBSERVATIONS.—Now in this case we can scarcely conclude that the morbid appearances themselves satisfactorily explain the cause of death; for, with the exception of the right kidney, we do not find any organ injured to such an extent by the deposition of morbid matter, as necessarily to arrest, or, indeed, in a material degree, to interfere with, the due performance of its function. And although the right kidney was much diseased, yet the urine was natural and evacuated in natural quantity; the left kidney, doubtless, discharging the function of the right as well as its own. Nor can we well suppose that the function of respiration could be greatly impeded by the small and scattered collections of matter de-

posited in the lungs. The deposition of morbid matter is, then, rather to be regarded as an index of the constitution, or what is the same thing, as the effect rather than the cause of a diseased condition of the constitution. Of the character of this matter, and, indeed, of similar morbid deposits in general, we know but little in respect either to chemical constitution or minute structure. It varied much in consistence;—in the external tumors, for example, it was firm and dense, while in the lungs and kidney it was more or less softened. Now there can be no doubt that the matter in question was formed either from the fibrin or albumen of the blood, but from which it is difficult to say, as they are identical in chemical composition, and cannot in a solid form be clearly distinguished from each other by chemical re-agents. I conclude that the matter was true cancer approximating in the lungs and kidney to medullary sarcoma. We learn that the deposition of this matter occurred at the most critical period of the life of man, and if the report of the patient be correct, that in the instance of the external tumors it was produced with great rapidity. It occurred also under the depressing influence of grief and remorse, and in a constitution exhausted by dissipation and excess; circumstances every way favourable to the development of malignant disease. It is worthy of attention that the urine, notwithstanding the diseased condition of the right kidney, was natural; and that the formation of the tumors was not attended with pain. In respect to the treatment in a case like the present, where malignant disease so extensively prevailed, it is obvious that palliation of distressing symptoms can alone be attempted.

MEDICAL GAZETTE.

Friday, February 10, 1843.

“Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso.”

CICERO.

ACCIDENTS IN COAL MINES.— SAFETY LAMPS.

In the year 1839, a Committee was appointed at South Shields to investigate

the causes of accidents in coal mines; their report has lately been published, and is now before us.*

Explosions in mines, as every one knows, are of frequent occurrence, and they destroy life in two different ways; the pitmen being either killed by the explosion itself, or suffocated by the *fire damp* which follows it. Within the last twenty years, more than 680 miners have been thus destroyed in the coal district of the Tyne and Wear alone.

The points considered by the Committee were, Safety Lamps, Ventilation, Scientific Instruments, Infant Labour in the Mines, Plans and Sections, Scientific Education of Officers of Mines, Government Inspection, and medical treatment after explosion.

The great source of danger to miners is the *fire-damp*, or light carburetted hydrogen gas, which is evolved from coal in the greatest profusion.

“So abundant is it in some of the northern mines, that to procure a natural gas light, as this Committee has more than once observed, a small hole a few inches deep has only to be made in the coal, and a tube inserted, when the gas discharges through it so freely, as to enable it to be lighted at its end.” (Report, p. 7.)

When this gas is mixed with from 83 to 94 per cent. of atmospheric air, (which is supplied by the ventilation of the mine), and then brought into contact with flame or heated metal, it explodes like gunpowder.

Moreover, heavy carburetted hydrogen gas, or olefiant gas, is also supposed to exist in the mines. The Committee say, “the existence of this gas in the mine, now almost indubitable, is most important in the use of the safety lamps, as it explodes at a lower temperature than the light carburetted hydrogen.” So far, so good: but we

* The Report of the South Shields Committee, appointed to investigate the causes of accidents in Coal Mines. With Plans and Appendix. London, 1843.

hardly understand what point they wish to make, when they add, "iron heated to redness will ignite it, the flame of which will again explode the fire-damp;" for they had just before said that the fire-damp will explode by the contact of heated metal, so that it is not obliged to wait for the ignition of its kindred but heavier vapour.

Another inflammable and destructive gas, *sulphuretted hydrogen*, adds to the perils of the mines, for this, too, will explode when the safety lamp becomes red-hot. Lastly, they are infested by carbonic acid gas, called in the north the *stythe* or *choke damp*, but in Lancashire the *black damp*. Of all these exhalations the most fearful is the fire-damp, which, in fact, would form the chief ingredient in the atmosphere of mines, were it not for artificial ventilation. When ventilation is imperfect, this gas explodes; hence it has ever been the chief terror of miners, and scientific ingenuity has long been employed in endeavouring to obviate this catastrophe.

In the beginning of the last century the steel mill was invented, which produced a light by the collision of flint and steel. This was once supposed to be safe; but, unfortunately, it has sometimes exploded an inflammable atmosphere, and caused the danger it was intended to prevent. "Sometimes one hundred of these dangerous instruments were in daily use in an inflammable mine." (Report, p. 11).

The first inventor of a safety lamp was Humboldt, in 1796; but as the flame was isolated from the atmospheric air, as well as from the explosive gas, and would burn only while the air contained in it was unconsumed, this lamp was found to be practically useless.

In 1813 Dr. Clanny invented a lamp which, like Humboldt's, was isolated, but it was supplied with fresh air. Its inconvenience was the objection to its

use. In 1815 Sir Humphry Davy and Mr. Stephenson each invented a safety lamp; and as the former one has become celebrated all over the world, its merits and imperfections are first to be considered. This lamp "protects against ignition when the explosive gas is quiescent, but it is totally defective when that gas is in motion, and can reach the wire gauze in that state of condensation which a moving column of gas always acquires; it then becomes no longer a safety lamp." This is Dr. Birkbeck's evidence, which is confirmed by the Belgian Commission, by Mr. Gurney (the ingenious inventor of the Bude light), Dr. Pereira, and other witnesses. The theoretical objection, moreover, has been too frequently confirmed by explosions in mines where the Davy lamp was used. Thus, in a Cumberland mine, the Salton-Low Bottom, where a father and son were killed by an explosion, after the accident "the lamps were carefully examined, and all the lamp tops were found to be screwed on, so that it appeared that every precaution had been taken." (Report, p. 15).

At Wallsend Pit there was an explosion in June 1835, by which 102 persons were killed at once. In this case there had been various warnings of the accident, the lamps foretelling the danger which they were unable to prevent. The Committee says, "Here, then, is danger apparent, the men forewarned—anxious—alarmed; here are two days' warning, increased precaution, and nothing but Davy lamps,—the lamps then on fire,—red-hot,—these the last living accounts from the pit; then comes explosion, and all further trace from its sweeping destruction lost."

Perhaps it might be answered that the Davy had done good service by giving plain warning of the coming danger, and that the mine should have been quitted for a few days until ventilation had swept away the noxious

gases. Moreover, there is an addition to this lamp, by which its safety is increased, namely, a tin screen, which slides upon the frame wires of the lamp, and encircles the circumference of the gauze cylinder to an extent of about one-half to two-thirds of its circumference. This seems to have been but little insisted on by Sir H. Davy, who, with the natural zeal of an inventor, thought his safety lamp far safer than it really was. He communicated the improvement to Mr. Buddle; "yet in Wallsend Colliery, under Mr. Buddle's own able jurisdiction, the precaution of a tin shield, as was observed at the visit of this Committee on the 7th October, 1839, four years after his public declaration of such a danger, was very partially employed, the men generally working with the naked Davy lamp; and almost every pit which the Committee have visited being precisely, as refers to this point of the lamp, in a similar condition." (Report, p. 14).

The upshot of the matter, however, is, that the Committee withdraw their confidence from this world-famous invention; whether our miners, hitherto "the slaves of the lamp," will do the same, remains to be seen.

The next lamp considered is Stephenson's, a highly ingenious invention, but not sufficiently perfect for use. It is liable to explode inflammable gases, and its apertures become obstructed by dust, causing it to burn but dimly. An excellent improvement, producing a lamp far preferable to Stephenson's, both for safety and for continuance of light, has been effected by Mr. Henry Smith. It seems to have preceded a similar lamp invented by M. Lamielle, of Belgium, and is now used in several collieries.

The Committee then detail the qualities of four different lamps invented by Dr. Clanny. The first we will pass over, as it does not meet with their

approbation. The second was infinitely better. When the Committee tried it at Wallsend, it continued to burn in a current of air that extinguished the Davy lamp as well as that of Upton and Roberts. Again, when the three lamps were tried "in a feeder of gas," Upton and Roberts' first blew out with an explosion, and then the Davy, while Dr. Clanny's appeared but little affected by the gas; but the light was so imperfect as to show only a glimmer through the lens. "In several trials it continued to operate in a similar manner, but the light was invariably so small as to be inapplicable to the purposes of practical mining."—(Report, p. 19).

Dr. Clanny has since improved this by substituting a thick globular shield of glass for that part of the metal shield which is opposite the flame. This lamp is superior to the last one in the steadiness and brightness with which it burns. In a fourth lamp there is a naked projecting globe of strong glass, without any external wire-gauze; but the facility with which the glass is broken, and the too great weight of the lamp, make it inadmissible.

On the whole, though Dr. Clanny's best lamp is not the desideratum—although it is not a perfect safety-lamp—it is the best which the Committee have examined.

The Upton and Roberts' lamp is of most ingenious construction, and was strongly recommended by the Parliamentary Committee of 1835; yet it had not been adopted in a single mine of the north five years afterwards. Nor was this abstinence unreasonable; for the lamp is too delicate for use. It is perfectly safe; and indicates approaching danger with the most exquisite nicety; but its very sensibility would render it inconvenient to the practical miner. Before the Davy lamp is much affected, it usually explodes itself out,

In an experiment in Monkwearmouth Pit (the deepest in England) "it extinguished itself even at a walking pace in the hand: the glass and light were smoky and dim. At Wallsend it was tried, with others, in a feeder of gas, and could scarcely be brought into operation, from its facility of extinction." (Report, p. 22).

Hence, although a capital lamp for experiments, in the hands of the scientific man, it will not be voluntarily used by the workman; and, if adopted on compulsion, would seriously diminish the produce of the mines.

The Belgian Commission, likewise, though fully alive to the merits of this lamp, found it impossible to recommend its use, from the grievous faults by which those merits are obscured.

Mr. William Martin's lamp is very cleverly constructed, without wire gauze. Like the lamp of Upton and Roberts, this one is of the most singular delicacy—it is extinguished almost on the approach of carburetted hydrogen; but as, under the present system of working mines, lamps are intended to burn in a fiery atmosphere, and not wanted as a mere test of its foulness, this lamp cannot be used. As the glass cylinder, too, is unprotected by gauze, the same objection applies which was urged against one of Dr. Clanny's lamps. Mr. Richard Ayre has constructed two modifications of the Davy lamp; but, though ingenious, the Committee does not think it necessary to dwell on them.

In consequence of the inquiries of the Belgian Commission, two variations of the Gauze Safety Lamp have been invented in that country.

The first of these is the Mueseler lamp, which has several excellent points about it. The South Shields Committee found the light good, and unaffected by currents, in a very fiery mine; and, when placed where there was much gas, it gave several slight explosions,

and then went out. The objections to it are, first, that its glass cylinder is only protected by eight ribs of iron, and is thus liable to fracture—an accident of the most dangerous consequences. Secondly, if the lamp is held so that the flame is not immediately under the chimney, and the foul air escapes into the lower part, it is extinguished. Thirdly, it is too heavy; for while the Davy weighs but 1 lb. 6 oz., the Mueseler is 2 lbs. 11 oz.

Last of all comes the Lemielle lamp, a clever modification of the Davy. This is a good lamp, and highly recommended in the Belgian report: yet even this is not perfect. To quote the somewhat misty sentence of the South Shields Committee—"This lamp, then, has, in addition to the danger of exploding through the gauze bottom, if the disks are not sufficiently fine and numerous, a highly inflammable mixture and external inflammation by a heated gauze cylinder; the obscuration of the lamp by depositions of soot, that rapidly take place on the gauze above the glass and on the glass itself, rendering it, for ordinary employment, troublesome, inconvenient, and dangerous." (Report p. 27.)

The conclusion of the Committee is, that no mere safety-lamp is able to secure fiery mines from explosion; and that to rely on lamps alone is a fatal error, which induces the calamities intended to be guarded against. The best safety-lamps are the improved Clanny and the Mueseler, provided the latter has a continuous gauze cylinder. All such lamps, however, must be examined daily, and the workmen must be warned that they are not absolutely, but only comparatively safe. The Davy lamp without a shield they assert to be a most dangerous instrument. The grand safeguard against explosions consists not in safety-lamps, but ventilation.

We wish that, in this age of xylography, the Committee had adorned their useful report with wood-cuts of the lamps described; they would have cleared up many a difficulty in the text.

MEDICAL REFORM.

IN answer to a question on this subject put to him on Tuesday evening by Mr. Fox Maule, Sir James Graham said that he had bestowed the utmost attention on the subject of Medical Reform. He would add, that the Government were now in communication with the Colleges of Physicians and Surgeons respecting it, and were approximating to a satisfactory conclusion. Both of these corporate bodies had consented to an arrangement by which an alteration would be made in their constitutions. It was also the intention of Government to introduce a bill for the purpose of effecting certain reforms in the medical profession throughout the united kingdom generally; and he hoped that in a short time he should be enabled to lay such a bill before the House.

A PLEA FOR NATIONAL HOLIDAYS.

THE student of the mathematics is often agreeably surprised to find that the different branches of the science to which he is devoted give their concurrent testimony to the same fact; and that the truth which he learned in the elements of geometry, or of algebra, again bursts upon him in the pages of the higher analysis. The same kind of coincidence is sometimes found in morals, or the conduct of life; and there are points so well made out, so firmly based on certainty, that they are alike insisted on by the Stoic and the Epicurean.

Thus, there is a principle which we are apt to forget amid the whirl of modern life, and the necessity of immediately executing orders for America—the principle, namely, that all work and no play makes Jack a dull boy; and that even if a man is considered as a mere machine, he will go the better for an occasional oiling.

It is this maxim which Lord John Manners supports in a recent pamphlet,* grounding his arguments in part on the old and laudable customs of the Church. It is this maxim which the Roman lyrist recommends to his brother poet, when he insists on the admixture of occasional sportiveness with his graver studies:—

*Verùm pone moras, et studium lucri;
Nigrorumque memor, dum licet, ignium,
Misce stultitiam consiliis brevem.
Dulce est desipere in loco.*

And the hygienic physician will assuredly agree with the ancient Epicurean and the modern tractarian, that nothing can be more pernicious to mind and body than unintermitting toil: “that way madness lies.”

But as opposite parties sometimes agree in what is right, they also too often conspire in what is wrong; so that the puritan and the utilitarian have joined in crushing the budding amusements of the lower classes, and have condemned them to resort to the conventicle, or the pot-house, as their only stimuli. One coterie is jealous of the festive doings of every man under £200 a year; or, as the song has it—

*“The poor must not share
A cracked fiddle in the air,
That offends all sound morality!”*

While, on the other hand, the dreary utilitarian considers every recreation of the working classes a check to production, and would calculate how many hours of profitable labour were consumed in a merry meeting. These are the only figures he can see in a dance! But error, though long-lived, is mortal; and we agree with Lord J. Manners that a reaction has taken place against this special order of absurdities. The philanthropist and the politician alike see that diversions form a necessary ingredient in the very life-blood of our social frame; a man fevered by unmitigated labour “is fit for treasons, stratagems, and spoils;” and a May-pole is not merely a tall wooden cylinder crowned with garlands, but an electric conductor which protects the time-honoured edifices of the state!

Something has already been done in the way of reform: “here and there gardens have been planted, and museums built, and occasionally even a holy-day provided for the working

* A Plea for National Holy-days. By Lord John Manners, M.P. London, 1843.

classes and the poor" (Lord J. Manners); what is still wanting is the public acknowledgment that artisans require entertainment as well as instruction; and that mechanics' institutes, and even the Adelaide Gallery itself, will not supply every craving.

The objection will be made that when artificers and husbandmen obtain a holiday, they abuse it, or, in plain English, they get drunk. To this Lord John Manners replies, that when the opportunity is more frequent, it will be less likely to be misused. We would add, that the well-brushed employer of the labourer or journeyman is not himself so temperate as his equal in Spain or Italy, yet he is not excluded from festivity on account of the difference in latitude. The devil, says the adage, is not so black as he is painted; and as experience has shown that the liberal admission of the public to museums and gardens has not been attended by so much chipping and scribbling as was apprehended, so it would be found that a national holiday, a general unwrinkling of care-worn brows, would not be accompanied by any prodigious quantity of intoxication or violence. At any rate, whatever objections might be urged by the moralist against some forms of festivity amidst the promiscuous assemblages of large towns, they could not be applicable to the more discreet population of our villages. The slightest encouragement from the gentry, their mere presence and approbation, would suffice to revive the manly sports, and the dances on the green, for which the noble author so reasonably sighs. His pamphlet, we observe, is dated from Belvoir Castle; has anything been done for the good cause in that neighbourhood?

CLINICAL NOTES,

By J. ADAIR LAWRIE, M.D.

Professor of Surgery, Anderson's University,
Glasgow.

[Continued from p. 670.]

CASE XI. — *Traumatic aneurism of Brachial—Ligature of Axillary—Hemorrhage from sac.—Amputation—Cure.*

Neil Macdonald, æt. 30, labourer, admitted July 30, 1832. Was wounded at right elbow three weeks ago, by an explosion while blasting a rock. Radial artery was cut at the elbow, and in four hours both ends were

secured by ligatures. Repeated severe hemorrhage from wound, from which a large dark clot of blood projects, and from which there was considerable bleeding a short time before admission. There is a large aneurismal tumor four inches long in the course of the brachial artery. The axillary artery was tied immediately after admission. Temperature of arm fell to 70°, that of opposite being 80°.

August 9th.—Ligature came away to-day—doing well.

September 3rd.—A portion of the integuments of the aneurismal sac sloughed, and after the patient had undergone considerable excitement, profuse hemorrhage took place from the sac, in consequence of which it was deemed proper to amputate the limb at the shoulder-joint.

He went on favourably, and on the 14th of November was dismissed—cured.

In this case the secondary hemorrhage did not come from the original wound, but from the sac of an aneurism between it and the axillary, the integuments on which had sloughed.

These cases, and many others which might be quoted, prove that the Hunterian operation is quite as successful, and possesses the same advantages in circumscribed traumatic aneurism, as in aneurism from disease; from which I think I am entitled to infer, that the revival of the old operation is a most injurious retrograde movement in the treatment of this disease.

What is the proper operation in cases of *diffused* traumatic aneurism?

The reply which I would give to this question, with some limitations, is the same as in the last cases—the Hunterian operation. I know from experience that it will succeed, and it requires little reasoning to shew that it must be easier to expose and tie an artery at a spot where it is uncut, and where the cellular tissue is little if at all injected with blood, than to cut upon a wounded vessel through clots of blood, and infiltrated cellular membrane, expose the bleeding spot, and apply two ligatures. In as far as the subsequent condition of the wound of the operation is concerned, it is much less dangerous.

CASE XII. — I recollect one case (the notes of which I have not by me), in which the radial had been wounded near the wrist—pressure had been tried without success, and the soft parts in the neighbourhood of the wound were infiltrated, and in an unhealthy condition. They were laid open, the wound exposed, and two ligatures were applied. Gangrene attacked the wound of the operation, spread to the hand and fore-arm, and the patient died.

I was strongly impressed with the result, and at the time felt satisfied that it would

have been different if the Hunterian operation had been performed.

The following case presents some points of interest :—

CASE XIII.—Diffused Traumatic Aneurism of Brachial, after V.S. Hunterian operation—Repeated hemorrhage from wound of operation—Case.

Arthur O'Neil, æt. 42, labourer, married, dark complexion, apparently healthy. Sixteen days ago was bled in right arm: bleeding was with difficulty stopped by compress and firm bandage, and was immediately succeeded by considerable swelling. On admission elbow-joint is bent, and limb at that point measures two inches more than the left. Its forepart is occupied by an irregularly defined swelling, extending two inches above and one below the joint; firm, pulsating feebly throughout, attended by a well-marked soufflet, and capable of being considerably reduced in size by firm pressure: pulsation of radial and ulnar natural.

July 31.—Two days after admission was shewn to a consultation, who recommended the Hunterian operation. The whole limb has, however, become so much swelled, probably from the severe manipulation to which it was subjected at the consultation, that operation at present seems inadmissible. Pulsation in radial and ulnar cannot now be felt.

August 3.—The tension of the limb continuing to increase, and appearing to depend on farther diffusion of the aneurism, the artery was tied yesterday, in the usual way, about the middle of the arm. Only one vessel was seen, which was large, and readily secured. The edges of wound were brought into apposition by two stitches and adhesive plaster. Soon after return to bed blood oozed from the wound to the extent of a pound, which was arrested by securing a small arterial branch. Temperature natural; swelling of limb diminished; some doubtful pulsation in radial artery at wrist.

8th.—On forepart of forearm, a little nearer wrist than original wound in vein, integument being livid with pain, and distinct fluctuation, a small puncture was made, and discharge given to two ounces of grumous blood. General swelling diminishing; distinct pulsation at wrist.

12th.—Original puncture in vein has given way, and gives vent to a considerable quantity of dark blood. Wound of operation nearly healed; ligature came away to-day.

23rd.—The wound of operation seemed all but healed, the oozing of blood had ceased, the aneurismal sac had burst, and discharged pus and coagula in considerable quantities. No fresh arterial hemorrhage from the sac or its neighbourhood. All seemed going on well, till last night at ten o'clock, when, after a fit of

coughing, profuse arterial hemorrhage took place from upper half of wound of operation. This was arrested by compress and bandage, and a consultation summoned, who recommended that the patient be very carefully watched, and an operation only performed in the event of the bleeding returning.

25th.—Hæmorrhage having twice returned it was resolved to expose and tie the artery at the bleeding point. A probe having been passed to the spot from which the blood seemed to have issued, the wound of the first operation was re-opened, upwards and downwards. Profuse arterial hemorrhage followed, which, being restrained by pressure on the axillary and subclavian, a vessel, apparently the trunk of the brachial, was exposed, and, when pressure was removed, discharged a full stream from the upper and under orifices. Ligatures, applied with the tenaculum, would not hold, and the wound was enlarged upwards and downwards, and this vessel secured at the margin of the axilla. The blood still poured from the wound in a full stream, and further dissection shewed another vessel also requiring two ligatures. Bore the operation well, and only lost about six ounces of blood. The operation was difficult and tedious, owing to the number of open vessels, the profuse gush of blood, and the extent of dissection requisite to secure all the vessels at sound points. The limb was wrapped in warm flannel, and before evening the temperature was good, and the circulation obviously going on.

30th.—Went on well till to-day, when hæmorrhage recurred from wound of last operation, to the extent of six ounces. Careful pressure was applied, and the patient sedulously watched.

Sept. 23rd.—No return of hæmorrhage: pressure continued. An abscess, containing foetid pus, has formed in the original sac in the forearm.

Oct. 20th.—Abscess has closed: wound of operation healed. Ligatures came away on 2d of October, being the 7th after the operation. Dismissed—cured.

This case presents several points of practical interest :—1st. Was the Hunterian really preferable to the old operation? Probably not, and for the following reasons :—1st. Because the aneurismal swelling was not only diffused, but, at the time of the operation, inflamed. The risk of suppuration and opening of the sac was thus incurred, which might have been prevented by performing the old operation. It is well worthy of remark, however, that although the sac was opened, clots of blood discharged, and two abscesses formed, not a drop of arterial blood escaped; showing that the Hunterian operation as completely arrests the flow of blood into the sac of a diffused traumatic aneurism as into that of aneu-

rism from disease ; and that a return of blood to the sac is as improbable in the one case as in the other. This fact appears to me an additional argument in favour of the Hunterian operation in all cases of traumatic aneurism, in which that operation is not otherwise contra-indicated. 2dly. Because the pulsation in the tumor had ceased. In any other situation than the bend of the arm this objection would not be valid ; but the frequency of the high division of the brachial artery gives it considerable weight here. In such a case, the brachial artery being exposed, and a high division discovered, the pulsation in the tumor having ceased, it would be impossible to discover which was the wounded vessel, and we would be under the necessity of securing both, or recurring to the old operation. On the other hand, if the high division existed, it might be that only one branch would be exposed and tied ; that might be the wrong one, and the operation rendered useless. I would, therefore, lay it down as a rule in traumatic brachial aneurism, that the old operation *must* be preferred in all cases in which the aneurismal tumor has ceased to pulsate. 3d. Because the pulsations of the radial and ulnar had ceased to be felt. As this arose from the increased tension of the limb, pressing on the main artery, and probably interfering with the anastomosing circulation, there was some danger of gangrene attacking the limb after the Hunterian operation. This risk would have been avoided by laying open the sac, turning out the clots, and relieving the tension ; all consequent on the performance of the old operation. It is but fair to say, that although each of these objections seems valid and reasonable, none of them is supported by the result of this case, there having been no hæmorrhage from the open sac, and no gangrene of the limbs.

The second point of practical interest is the hæmorrhage from the wound of the operation. There is nothing very unusual in such hæmorrhages, but the peculiarities in this case were their frequency, and the number of open mouths which required ligature. I feel somewhat at a loss to account for the latter of these ; but the most probable solution is, that there was a high division of the artery, and that I exposed the vessels, and included both in the same ligature, immediately below the point of bifurcation, and while they were still contained in the same sheath. The great size of the vessel remarked at the time of the operation favours this view. It is further strengthened by there being an unusual distribution of the vessel in the left arm.

A third circumstance of interest is found in the late period at which the hæmorrhage occurred. The ligature came away on the tenth day : during the next ten days all

seemed going on favourably, and the wound had all but healed, when, on the twentieth day from the operation, and the tenth from the separation of the ligature, violent discharge of blood took place from the wound during a fit of coughing. Two practical inferences present themselves—that no patient, under such circumstances, is safe until the wound of the operation has actually closed, and that, until this has taken place, bodily exertion of all kinds must be carefully avoided.

What is to be done when hæmorrhage occurs from the wound of the operation ? If the quantity of blood lost has not been great, and the patient not much weakened by it, pressure, and patient watching by a dresser or pupil, should first be tried. No doubt, as a general rule, one profuse bleeding is followed by a second, and that by a third, until the patient is either placed in safety by an operation, or bleeds to death. On the other hand, as it is true that pressure occasionally prevents its return, it ought, under the circumstances stated, to have *one* trial. The hæmorrhage which occurred in O'Neil's case, on the 30th of August, adds another to the instances in which pressure has been successful. To it may be added No. 13 and 18 in the tables—the one from the femoral, the other from the external carotid.

I would never give pressure more than *one* fair trial : if hæmorrhage take place a second time, it is all but certain that it will a third. Few patients can bear these repeated profuse bleedings, and we may sacrifice our patient to our desire to avoid an operation. The time, therefore, for operation is *not later* than the second bleeding, and may be earlier.

The Kind of Operation.—No operation short of exposing the bleeding point, and applying two ligatures, one to the upper, the other to the lower orifice, can be trusted to. To this rule I would admit of no exception, provided there is sufficient space between the bleeding point and the heart, to which efficient pressure can be applied whilst the open orifices are being exposed and secured. I am well aware that many good surgeons have preferred tying the artery at a point nearer the heart than the bleeding spot ; but the result of the great majority of such cases has been the return of the hæmorrhage and the loss of the limb or the life of the sufferer. The procedure recommended is more difficult, but this must yield to the undoubted fact that no other can be trusted to.

In no other operation, where the artery is large, is the surgeon more at the mercy of his assistants ; so much so, that unless efficient assistants can be procured, it ought not to be undertaken. Almost every thing depends on arresting the flow of blood into the vessel at the wound. To effect this, careful pres-

sure must be applied nearer the heart to arrest the direct circulation, and farther from the retrograde. Few assistants are possessed of sufficient strength of fingers to continue the pressure securely during the time required for an operation which must always be more or less tedious. On this account it is necessary to have two, one to relieve the other. The surgeon feeling his mind at ease on this point, may proceed leisurely to expose the uppermost part of the brachial, or the upper third of the femoral. This should be done by a careful dissection, and the upper orifice first secured. I can hardly conceive a more profuse or embarrassing discharge of blood than was poured into the wound in O'Neil's case, from four large orifices, and yet the pressure on the subclavian was so efficient that I was able to dissect two arteries upwards to near the margin of the axilla, and secure them, with the loss of a very few ounces of blood.

Let us suppose, however, that the bleeding point is so situated (as the femoral close to Poupart's ligament,) that there is no room for efficient pressure. Then, if the patient can at all bear it, two operations are necessary to place him in safety—ligature of the sound artery (in this case the external iliac,) followed by exposure of the open orifices and the application of a ligature to each. Short of this he is not safe. If this cannot be done, we must be satisfied with the first operation, and careful pressure to the bleeding wound.

In the 24 cases given in the above tables, secondary hæmorrhage took place in 5 (more than 1 in 5;) in three from the wound of the operation, in one from the bursting of the sac, and in one from the original wound. In two amputation was performed—one died, and one recovered. In one (O'Neil's case) the wound was re-opened and fresh ligatures applied with success. In two pressure was trusted to with success. So far as these statistics go, they teach us to give pressure, as firm as safety will allow, one fair trial; that failing, to secure the vessel, as above advised. Amputation can seldom be justified for uncomplicated hæmorrhage, and should only be performed when all other means have been fairly tried and have failed.

The following case occurred early in my practice, but as it illustrates still farther the subject under discussion, I may be excused relating it:—

CASE 14.—June, 1825.—I was asked by a medical friend to see a case in his regimental hospital, under the following circumstances:—A bullock-driver, while herding some of the Hon. East India Company's bullocks in the south-west of India, was attacked by a party of one of the neighbouring mountain tribes; his cattle were carried off, and he left, wounded in the right arm by an ar-

row. The weapon entered the middle of the arm at its forepart. He fainted from loss of blood. The wound healed, and for some days he thought no more of it. Soon the arm began to swell and get painful. He went into hospital, and the swelling being considered an abscess, was poulticed and punctured posteriorly. Neither pus nor blood was discharged. In this state I saw the case, and on careful examination having discovered that the swelling pulsated, and having taken into account the direction of the wound, I considered it a case of traumatic aneurism, and recommended ligature of the artery. The operation was not gone into. Some days after I was again asked to see the case. It had made very rapid progress for the worse. The arm was very much swelled, cedematous, and cold. The integuments over the swelling were gangrenous, and the appearance of the parts around the elbow and shoulder indicated a threatened and rapid extension of the mischief. The pulse was quick, and the tongue dry. It was necessary to do something, and that immediately. I opposed a proposal to remove the limb at the shoulder-joint, and advised that the integuments should be freely laid open over the artery, the clots of blood turned out, and the artery tied above and below the point where I believed it to be wounded. As this view of the case was still doubted, I was asked if I would undertake the operation, which I readily agreed to do. A very free incision was made; immense clots of blood turned out; the wounded artery, when exposed, bled very freely. The subclavian was steadily and efficiently compressed, and two ligatures were applied—one above, the other below the wound. Pretty extensive sloughing of the integuments followed, but the gangrene ceased to extend, and the patient ultimately did well.

This case gives an epitome of the progress and (so far) proper treatment of diffuse traumatic aneurism. In the early stage, when the pulsation was distinct in the tumor, and there was neither suppuration nor gangrene, the Hunterian operation might with propriety have been performed, and was the operation which I proposed. In the later stage, when the pulsation in the tumor and at the wrist had ceased, and gangrene had set in, the Hunterian would have aggravated the evil, and hurried the death of the whole limb. The only chance of preserving the limb lay in the old operation, accompanied by free incision, and removal of all clots of blood. The latter part of the procedure removed distension, and allowed the collateral vessels to renew the circulation.

Moore Place, Glasgow, December, 1842.

FELLOWES' CLINICAL PRIZE REPORTS.

By ALFRED J. TAPSON,
University College Hospital, 1842.

CASE V. — *Acute articular rheumatism, affecting nearly all the large joints, attended with considerable symptomatic fever, and complicated with a severe attack of endocarditis and pericarditis—cured by bleeding, calomel, opium, colchicum, &c.*

ANNE HICKS, ætat. 20, admitted May 16th, 1842, under Dr. C. J. B. Williams. A single woman, of moderate conformation, fair complexion, and naturally rather pale. Her habits have always been regular, and her health good. She is a servant, and in her last place acted as kitchen-maid. She has never had rheumatism before, nor any severe illness. Her mother died of disease of the chest; her father is healthy, except being frequently troubled with rheumatism in his fingers; and one sister of her's is also very subject to rheumatism.

The present attack commenced on the 9th instant. The day before that she had been much heated with work; and to cool herself went into a cold scullery, paved with stone, and sat down on the floor. The first symptoms were a feeling of general weakness and lassitude, with slight aching pains in the ankles; these were soon succeeded by cold chills, alternated with flushes of heat, anorexia, thirst, &c. Still, however, she managed to continue at her work until the 14th, when, in addition to the above symptoms, her hands, wrists, and knees, became hot, swollen, and painful; and she was obliged to take to her bed. Last evening she had a severe pain in the hypogastrium, in consequence of not having been able to pass any water for about twenty hours, although she had frequent desire to do so: this was relieved by her passing about two pints of dark-coloured urine. On the 14th she took a dose of castor-oil, which operated freely on her bowels, and she has since had some medicine from a surgeon; but continuing to get worse, she came to the hospital.

The present symptoms are as follows:—She lies on her back, with all her limbs extended, and screams if she is moved at all, from the pain it causes. The countenance has a very anxious expression. She complains of a very severe pain across the loins; also in the hands, wrists, feet, ankles, and knees, especially the knees: all these joints are swollen considerably, have a slight blush of redness over them, feel very hot, and are exceedingly tender and painful when touched. The skin generally feels hot, the pulse 108 and full; the first sound of the heart is

prolonged and rough, and there is some increased dulness in the cardiac region. The tongue is dry and furred; she is very thirsty, but has no appetite; the bowels costive. The catamenia appeared slightly yesterday, which is a fortnight before the proper time: in the general way she is very regular.

V. S. ad f̄xiij.

℞ Calomel, gr. vj.; Opii. gr. ss. M. f. pilula nocte maneque sumenda.

℞ Vinî Colchicî, ℥ xxv.; Sodæ Tart. ℥ ij.; Mist Camph., Aquæ, aa f̄ss. M. f. haustus 8vâ. quâque horâ sumendus.

Low diet.

As soon as twelve ounces of blood were drawn she fainted: it relieved the pain, and diminished the heat of the skin a little. The blood was buffed and cupped.

May 17th.—The pains in the joints are still very severe, and the tenderness extreme. Since last evening she has had great pain and tenderness in the region of the heart, and under the left breast, much increased by taking a deep breath, or by pressure; and there is dulness on percussion up to the third rib. The first sound of the heart is accompanied by a distinct loud murmur, and there is a slight clicking friction sound heard between the left breast and the sternum at the commencement of the first sound. The surface of the body is very hot; the pulse 120 and sharp; the breathing hurried; the tongue very dry, and a good deal furred; the bowels not opened yet; the urine not scanty nor high coloured; its specific gravity is 1020; it is not albuminous, and contains a copious flocculent sediment. At 10 o'clock A.M. she was ordered—

Hirudines, No. x. regioni cordis. Haust. domesticus statim.

And as the pain in the region of the heart was not much relieved, at 3 o'clock she was ordered—

Repetatur V. S. ad f̄xiij. Statim repetatur haust. domest. Sumatur pil. calomel. 6tis horis vice bis die. Pergat mistura. Cras mane si perstiterit dolor lateris admov. hirud. No. xij.

The blood was extremely cupped and buffed; the clot very firm and smooth; and on its upper surface were some small transparent flakes of lymph.

18th.—The leeches have not been applied, as the pain is almost gone from the side. She looks much better; countenance less anxious; posture less constrained; skin nearly natural; pulse only 81, and neither sharp nor resisting, but still pretty full; the swelling, redness, and pain of the joints very much diminished; also the dulness over the region of the heart is less extensive, and the murmur with the first sound rather less rough. The bowels have been well opened.

19th.—There is still tenderness over the heart and below the left breast; the murmur with the first sound is less, and there is no friction-sound; pulse 84; tongue moist, but furred, and the gums are rather tender and swollen, and the breath has a slightly mercurial foetor.

Admov. Hirud. No. vj. infra mammam
Sinistram; Repetatur pilula bis die
• tantum, pergat mistura.

21st.—Has very little pain in the joints, excepting the right wrist and the knees; none on the left side, or over the heart; the extent of dulness is nearly natural; the murmur with the first sound is still distinct, but much less loud than it was; it is most distinct at the base of the heart, and is propagated along the course of the great arteries; the breathing is natural; feels faint if she moves about, and gets palpitation of the heart; the pulse 72, rather sharp but quite compressible; bowels rather purged; urine plentiful, natural in appearance, &c., but contains a considerable quantity of urea, for on adding an equal volume of nitric acid to a portion of it the colour is deepened, and gas evolved, and, on cooling, a great quantity of crystals of nitrate of urea are formed.

Sumatur pilula omni nocte tantum.

23d.—Has no pain anywhere; all the joints feel stiff, but she can move them without pain; face very pale, and she has got much thinner; appetite returning.

Omitt. Pilulæ.

24th.—Had a slight return of pain in the knees last evening, but it is gone again to-day; pulse 66; urine moderate in quantity, sp. gr. 1013, reaction acid; the quantity of urea is diminished, though still in excess, and there is also an excess of lithic acid.

26th.—Says she feels quite well now; palpitation much less, and she does not feel giddy now on getting out of bed; has rather more colour in the face and lips; appetite good; tongue covered with a white fur; bowels regular; urine free, sp. gr. 1018; no apparent excess of urea or of lithic acid, but an excess of the phosphates.

Adde haustus Potass. Iod. gr. ij. Middle diet.

28th.—Is going on very well, but is much anæmiated and very weak; the murmur with the first sound of the heart is rather louder, probably from the anæmia; there is a distinct venous murmur to be heard over the jugular veins; the frequency of the pulse is much increased by making her sit upright in bed; feels very hungry; bowels rather confined; urine apparently natural.

Habcat. pilulæ. Aloës c. Myrrha gr. v. omni nocte. Omittatur haustus.

R Potass. Iod. gr. ij.; Sodæ. Tart. ℥ij;

Infus. Quassia Aquæ; aa. fʒss.; fiat haustus ter die sumendus. One or two eggs allowed daily.

30th.—Complains of nothing except weakness; got up yesterday, but could not stay up more than about ten minutes; improving in appearance; pulse 68, fuller and stronger.

31st.—Movement causes less palpitation than it did, and she does not feel dizzy when she sits up in bed; but this increases the heart's action and also the murmur with the first sound; the venous murmur is diminishing; bowels still costive.

Omittantur pilule et haustus.

R Pil. Camboj. Comp. gr. v. omni nocte.

R Ferri Iodid. gr. j.; Infus. Quassia, Aquæ. Cinnam. aa. fʒvj.; Tinct. Humuli, fʒss.; M. f. haust. ter die sumend. Full diet.

June 1st.—Is sitting up; feels quite well; bowels not opened since 29th.

Statim sumat Haustus Sennæ.

4th.—Has more colour in the face, and is gaining flesh and strength; the murmur with the first sound, and also the venous murmur, are quite distinct, but much less than they were; tongue clean; appetite good; bowels regular; urine natural; has no pain or stiffness in the limbs.

Discharged cured.

REMARKS.—The *diagnosis* of the disease was sufficiently clear: a single glance at the patient as she lay in bed was almost enough to inform us of the name of the disease: the position on the back, with the limbs extended, the anxious appearance of the countenance, and the shrinking from being touched, are almost distinctive of acute rheumatism. The symptoms present were those of a considerable amount of inflammatory fever, with severe local inflammation of most of the joints; and also there was apparently commencing inflammation of the endocardium and pericardium, as indicated by the first sound of the heart being rough and prolonged, and the increased dulness in the region of the heart. That these symptoms depended on rheumatic fever was apparent; first, from the mode in which the attack came on—which was that which is most common in this disease, viz. a premonitory attack of fever, indicated by rigors, followed by heat of skin, thirst, anorexia, languor, &c.—before the disease shewed itself decidedly in the joints: secondly, from the number of parts affected, and these chiefly the large joints, wrists, and knees, which would distinguish it from gout: the character of the fever, also, would distinguish it from ordinary fever, the intellect being perfectly clear and the sensibility excessive: and thirdly, the cause also was that

of rheumatism, viz. the application of cold to the surface of the body at the time that it was greatly heated; the attack evidently depended on some constitutional cause, both from the preceding and accompanying fever, and the number of joints affected. The disease was, therefore, clearly acute rheumatism, and belonged to the diffused articular variety, which usually attacks the larger joints chiefly, as in this case, affects all the tissues of the joints, and is less peculiarly rheumatic inflammation than some of the other forms.

We pass on now to notice the affection of the heart, which, on the day after her admission, had assumed a marked character. The *general symptoms* of disease of the heart were (besides the symptoms of general fever already enumerated), the anxious expression of the countenance, which is very commonly present, the frequent sharp and strong pulse, the hurried respiration, and pain in the region of the heart, increased by pressure or by a deep inspiration—the last is by no means a constant symptom of inflammatory affections of the membranes of the heart; where it is present it is valuable as tending to attract the attention to what might otherwise pass unheeded—and the fact of its inconstancy should lead us, in all cases of acute rheumatism, to use the stethoscope, as, according to Bouillaud, either pericarditis or endocarditis occurs in more than half the cases of acute rheumatism: and Dr. Williams stated, in his Lectures published in the *MEDICAL GAZETTE* in 1838, that he had found signs of endocarditis, or pericarditis, or both, in “fully three-fourths of the cases of rheumatism” which he had examined.

The *physical signs* were, dulness on percussion, extending up to the third rib, a loud filing murmur accompanying the first sound of the heart, heard most distinctly from the middle to the top of the sternum, also in the neck, and, in addition, a slight clicking friction-sound, heard between the left breast and the sternum at the commencement of the first sound. These symptoms and signs demonstrated the existence of a considerable amount of endocarditis and pericarditis. There had evidently been some lymph thrown out on the aortic valves, or else deposited on them from the inflamed blood, which caused a slight obstruction to the flow of the blood from the ventricle into the aorta: there had also been lymph effused into the pericardium, apparently (judging from the situation of the friction-sound) about the auricles, which is its most common situation; and there was also effusion of serum, causing the increased dulness on percussion.

In this case the inflammation of the heart could not be ascribed to metastasis

after the bleeding, inasmuch as the limbs remained as much inflamed as before, but the disease had increased greatly in the heart. Dr. Williams stated, in his clinical lecture on the case, that a great many cases are called metastasis from the limbs to the heart, which, in reality, are no such thing; and he explained the way in which the mistake occurs, thus:—“Acute rheumatism cannot generally be removed by bleeding alone; this may remove the common inflammation, but as it does not remove the specific exciting cause of rheumatic inflammation, this will probably recommence as soon as reaction comes on; it may not recur in the same parts; it may have been driven from the limbs but not from the heart, where it is more likely to continue and to recur than elsewhere, and in this way it happens that, after bleeding has removed the symptoms from the limbs, those in the heart become more prominent, and are more complained of because they alone are then felt.” This case shews that the heart may become affected before it is indicated by any obvious symptom, but the physical signs will always be discoverable by the proper use of the stethoscope and percussion; here there was increased dulness, and a long and rough first sound, before there was any pain.

What were the indications for treatment? The attack was acutely inflammatory; therefore, active antiphlogistic measures were called for, and as a primary step, in all such cases, there should be general blood-letting, where there is nothing to contraindicate this; but in this disease, large blood-letting is neither necessary nor useful, as in some others. Dr. Williams stated that about twelve ounces in females, and sixteen in males, is as much as should be taken at once. In this case twelve ounces were taken, and this amount produced faintness and nausea. Next, as regards medicines, the combination of calomel and opium seems to be the best in these acute cases, letting the former or the latter preponderate according as the inflammatory or nervous symptoms are most prominent: the calomel is the main remedy, acting we presume on the blood, reducing its adhesive properties, and causing the expulsion of the *materies morbi*: it should be given in full doses, so as not to irritate the bowels too much, but to affect the system in as short a time as possible, for as soon as this is done the inflammatory symptoms generally abate very decidedly. At this time she was ordered calomel (gr. vi.) and opium (gr. ss.) twice a day, and in addition a saline draught, with colchicum: the colchicum is of less importance at this period of the disease, than later, or when the inflammation partakes more strongly of the rheumatic character.

The next morning all the symptoms were

increased in severity, especially those referrible to the heart; leeches were therefore applied to the region of the heart in the morning, and a purgative draught given to open the bowels: this is an important object to attain as an auxiliary measure: we have seen many cases in the hospital during the last winter (1841-2), where striking improvements took place as soon as the bowels were freely opened. In the afternoon Dr. Williams saw her, and as the symptoms had been very little relieved, and the pulse was 120, full and sharp, he ordered the bleeding by the arm to be repeated; the calomel to be given every six hours, and the other medicines to be continued, so as to call into action all the emunctories of the body to aid in the expulsion of the disease from the system.

The effect of these different means was most strikingly seen by the next morning, and from this time the improvement was rapid, and almost uninterrupted: the blood was much more cupped and buffed than that taken at the first bleeding; the pulse, especially, was very much improved, being reduced in 24 hours from 120 to 84 in a minute, and every other symptom, general and local, was decidedly improved. On the 19th, as the friction sound was not quite gone, six leeches were applied, and the calomel ordered only twice a day, and from this time there were no inflammatory symptoms in the heart, with the exception of the murmur in the aortic valves, the consequence of the endocarditis, and this was not likely to disappear. The calomel was continued for some time after the gums were made tender, on account of the great tendency in this disease to return until the whole of the cause is eliminated from the body.

The murmur with the first sound of the heart gradually diminished till about the 27th May, when there was a great amount of anæmia; this cannot be wondered at, if we consider that she had lost more than thirty ounces of blood, and also that the disease itself is one which is extremely apt to be followed by anæmia: the anæmia was manifested by her general appearance, by the existence of a venous murmur in the jugular veins, by the great change in the frequency of the pulse, produced by change of posture from lying to sitting, and also by the loudness of the murmur with the first sound of the heart being increased, in consequence of the thin fluid that was then circulating, being much more easily thrown into sonorous vibration than blood of the natural density. The colchicum was continued after the calomel, and iodide of potassium added, both to remove any remains of the inflammation, and also to aid the absorption of the lymph that had been effused in the heart.

The colchicum was soon after omitted, and a mild bitter tonic substituted, as a preliminary step to the administration of more powerful tonics. After this the murmurs both diminished; the venous murmur, "bruit de diable," passing through the stage of "bruit de mouche" before she was discharged, when it was almost inaudible except under the influence of temporary excitement of the heart's action. On the 31st, the other medicines were omitted, and iodide of iron ordered with a bitter tincture and infusion, and full diet.

She was discharged cured on the 4th June, that is, in nineteen days from the day of her admission; or, reckoning the duration of her illness from the time she was attacked with symptoms of fever to the time at which she was ordered better diet, it was seventeen days. The short duration of so severe an attack we must attribute to the early and active measures that were resorted to in the very commencement of the affection of the heart. Had not the bleeding been repeated as it was, she would probably have suffered much more severely in the heart, more permanent mischief would have resulted, and the illness have lasted a much longer time.

The urine did not in this case undergo the usual changes in appearance and chemical constitution in at all the same marked manner as we have observed it in many other cases of rheumatism; there was, however, a great excess of urea for several days, and an excess of lithic acid; and these ceased as soon as the disease was pretty well eradicated.

The *causes* of the disease were both predisposing and exciting. She was hereditarily predisposed to rheumatism, her father being frequently attacked with it, and her sister also suffering a good deal from the same disease.

The immediate exciting cause was, her having gone from a hot kitchen, where she had been working till she had fatigued herself, into a cold scullery, and there sitting down upon the stone floor to cool herself—a proceeding as likely to insure an attack of rheumatism, where a predisposition to it existed, as any we can well imagine.

The *prognosis* was at first very unfavourable as to the duration and the effects likely to be produced in the heart; but in a few days it assumed a more favourable aspect; and this was strengthened by the disease being of the diffused articular variety, which is less peculiarly rheumatic in its character than the other varieties, and therefore proportionally more amenable to treatment; and also, it was the patient's first attack, which tended to render it still more simply inflammatory than it would otherwise have

been ; and to this character we may perhaps ascribe the fact of the appearances in the urine being less characteristic than usual. As regards the influence which the slight disease produced in the heart may have upon her future health, and the duration of her life, much will depend on the care she takes of herself to avoid a repetition of the attack, to which she will be very liable.

HOMŒOPATHY.

To the Editor of the Medical Gazette.

SIR,

It is with the utmost reluctance that I enter upon the discussion of the case of a private patient, and especially of that of a lady so exalted in station, and so endued with every excellent quality, as the late Countess of——.

Dr. Curie, it appears, has not perceived the indelicacy of so doing to the fullest extent ; and as you have in your last number inserted a long egotistical letter from him, partly reflecting on my professional reputation, I trust you will do me the justice, being the regular physician to the family, to give insertion to the following remarks, which I will make as briefly as possible.

Lady —— informed me that she had consulted Dr. Curie in March 1840, and stated that she felt his advice could not be followed by any but those of the strongest constitution. I agreed with her Ladyship, as I certainly could not “adopt Dr. Curie's views” of making his patients drink cold water alone when affected with an acute disease, and of the absolute necessity of avoiding all stimulants when in pretty good health. In the case to which I refer, on the contrary, from my knowledge of her Ladyship's constitution, I consider that the stimulants so moderately taken by her were the means of preserving her health. Such was the laxness of her habit, that her former accoucheur will, I feel confident, testify that two days after one of her confinements he was compelled, in order to save life, to administer meat and port wine, and that a fortnight afterwards he sent her out in an open carriage in the depth of winter.

I proceed to notice Dr. Curie's statements.

Whatever may have been the case “in March 1840,” Dr. Curie's gratuitous assertion that gastro-enteritis continued to exist up to the period of the fatal attack, I regard as pure conjecture ; as the symptoms during that interval denoted no such disease.

“The convulsive attacks increased rapidly, until my attendance was desired.” This is incorrect. They had sensibly diminished in violence and frequency under the employment of stramonium, before the self-

complacent doctor's vaunted nux vomica was administered ; so that this event did not prove that he “was right in his opinion.”

It is very extraordinary that Dr. Curie should, throughout the disease, have persisted that the case was one of inflammation of the brain coupled with gastro-enteritis [very like Broussais's almost exploded theory] ; but that he never once hinted at the probability of the existence of “softening of the brain,” which, he says, “could now no longer be doubted”—a very convenient assertion, after the post-mortem examination had disclosed its reality.

“The acute disease had already existed a fortnight before it was recognized.” It certainly was not recognized as inflammation of the brain, which Dr. Curie pronounced to be the disease, but which the post-mortem examination completely disproved.

With regard to the stimulants employed, I may observe that when I ordered one glass of wine (not “two”) to be taken, the pulse was remarkably weak. Lady —— complained of violent pain suddenly shifting from one part of the head to another, and as suddenly ceasing altogether. The effect of this glass of wine was, that she in a few minutes became entirely free from pain, and felt so well that she took a drive. Surely these were not the symptoms of “meningitis.” The wine, &c. taken in the night were given without my knowledge or sanction, and would of course not have been allowed except with such a state of the circulation as I had observed the day before.

At the time the “broth and coffee” (to which the continuance of the convulsions is erroneously attributed by Dr. Curie) were administered, Lady —— could not be said to be entirely under homœopathic treatment, as Lord ——, in his anxiety, hesitated for a time between the adoption of the two systems. From this period to that of the accouchement no nutriment was given, as on the absence of it Dr. Curie declared that safety depended.

After her Ladyship's confinement the vital powers were visibly giving way, and it became imperative that nourishment should, without loss of time, be administered. Dr. Curie strongly resisted its being given, but as it was evident to all the attendants that she was dying, Lord —— requested that the accoucheur and I should act according to the best of our judgment. We accordingly gave some strong broth, and even brandy and water, and succeeded in rousing the fleeting powers of life. Her Ladyship rallied, and lived about an hour longer ; but at length, without a return of the convulsions or hæmorrhage (both of which were predicted by Dr. Curie), and still remaining insensible, she sank.

Dr. Curie finding that his opinion was overruled, abruptly quitted the house, without stating his intention to any one present; thus leaving the responsibility of the case wholly on the accoucheur and myself. This, according to professional etiquette, and, to use his own words, "a sense of duty," he ought to have shared with us. He could, therefore, have no reason to complain of "not having been called" to the post-mortem examination of a patient whom he had deserted whilst living.—I am, sir,

Your obedient servant,

HARRIS DUNSFORD, M.D.

28, Somerset Street, Portman Square,
Feb. 6, 1843.

To the Editor of the Medical Gazette.

SIR,

MY attention having been called to a letter in the MEDICAL GAZETTE of the 27th ult., signed M. D., in which allusion is made to a "Mr. F——, accoucheur-general to Messrs. Dunsford and Co.," I feel myself bound to take notice of this charge (for so I consider it), although made by an anonymous correspondent, as there can be no doubt that I am the individual alluded to. So far from being "accoucheur-general to Messrs. Dunsford and Co." I have never attended in their confinements any patients who were ordinarily treated by homœopathic practitioners, with the exception of the late lamented Lady Denbigh, and the lady of Dr. Dunsford himself. Why I should have done so, especially in the latter case, may be very easily understood, when I state that I have known Dr. Dunsford and his family many years; long, I imagine, before he had either heard or thought of homœopathy; and it was not from any supposed or avowed belief in the system on my part, as any of my medical friends can readily testify: I have always believed it founded on totally erroneous principles.

I refrain from making any comments on the case which has led to the present discussion, as I did not see the lamented lady during her illness, although engaged to attend her in her daily expected confinement, as I had done twice previously. I was present at the post-mortem examination, at the particular request of Lord D. I may, however, state that, judging from the history of the attack, and particularly from the appearances found after death, I do not consider the case as one of ordinary puerperal convulsions.

It would have been desirable also if another of your correspondents, who signs himself a "Homœopathic Physician," had made himself acquainted with all the facts of the case, especially as regards Lady D.'s former confinements. Her Ladyship was on both

the occasions referred to under my *sole* care; Mr. Barnes having had nothing whatever to do with the matter. It is quite correct that her Ladyship nearly lost her life in her confinement eighteen months ago; but the cause was a violent and most alarming hæmorrhage. I need not say that on this occasion, the case being under my entire management, means more energetic than those furnished by homœopathy were sedulously employed. I may state further that I have never considered her Ladyship's rapid recovery on either of the occasions in which I attended her to be due in any way "to the homœopathic treatment during the period of gestation."

I trust to your usual candour for the earliest insertion of this letter, and remain

Your obedient servant,

GEORGE FINCHAM.

Spring Gardens, Feb. 2, 1843.

NOTE FROM DR. REID.

To the Editor of the Medical Gazette.

SIR,

IN the Number of the MEDICAL GAZETTE for the 20th January, page 595, I perceive an attempt to fix upon me a gross inconsistency, by some unknown person, under the name of "Scrutator." Had this proceeded from stupidity on the part of your correspondent I would have allowed it to pass unnoticed, but being a glaring attempt to pervert wilfully the truth it ought not to be allowed to escape exposure. This is no doubt a grave charge, but there is no difficulty in establishing its validity. Scrutator makes a quotation from a letter of mine to Dr. Paterson, contained in the MED. GAZ. for the 9th Dec. last, and for the purpose of imposing this upon your readers as a verbatim extract, he includes it within brackets. In this extract the words are so altered as to afford grounds for the charge of "flat contradiction" brought against me. Scrutator says, that I affirm "that Dr. Thomson was perfectly correct in stating that there was a central cavity in the corpus luteum," while the words used by me were these:—"I feel fully satisfied that all that Dr. Thomson meant by stating that there was a central cavity (and in this he was perfectly correct) was, &c." The word *correct* so evidently applies to what Dr. Thomson meant, that no one who reads the passage as it stands can doubt it for a moment; and of this Scrutator appears to be so fully aware, that he has altered the words in the quotation above alluded to for the purpose of perverting its sense in the way he has done. If your correspondent Scrutator had been somewhat less given to quibbling, and more familiar with medical

language, he would have been less captious in this case, even supposing that I had actually used the language he has attributed to me. Is he aware that anatomists talk of the cavity of the peritoneum, of the cavity of the pleura, &c. though no cavity really exists in these membranes, for their inner surfaces are everywhere in close contact? Is he aware that a surgeon may in conventional language speak of the cavity of a cyst, though it be quite full of coagulated blood; while another, using more correct language, might state that there was no cavity left in its interior, and that this was filled up with coagulated blood. Would any one at all familiar with medical phraseology have any difficulty in reconciling these two statements? Other statements contained in the letter by Scrutator could with equal facility be exposed by those gentlemen to whom they refer, but I have no doubt they will consider them totally unworthy of their notice.—I remain, sir,

Your obedient servant,

JOHN REID.

Jan. 30, 1842.

PRUSSIC ACID.

For preparing prussic acid, Dr. Winckler recommends us to put 120 grains of crystallized and finely-powdered pure yellow prussiate of potash into a tubulated retort, and to infuse it with a mixture of 2·10 grains of a solution of pure phosphoric acid of 1·25 specific gravity, and 480 grains of alcohol of 80 per cent.; to close the whole perfectly; then to put into the receiver 120 grains of rectified spirit of wine, to agitate the retort for twenty-four hours, and to distil after that period, aided by a good apparatus for refrigeration, and to prevent loss by introducing a hermetically adapted glass tube into the main tube, one end of which leads to the bottom of a small glass vessel, rather high than wide, and containing thirty grains of spirit of wine; and to add to the distilled liquor sufficient alcohol to cause its weight to amount exactly to an ounce and a half. The contents of cyanogen, ascertained by nitrate of silver, yielded in 100 grains of the acid 9·027 grains of cyanide of silver=11·9868 of cyanogen =2·0621 of anhydrous prussic acid.—*Jahrbuch f. prakt. Pharm.*; and *Annals of Chemistry*.

FISH.

Now as to fish. The Romans were excessively fond of fish. Hortensius is said to have wept when one died. The Licinii family assumed the cognomen, Muræna, because the head of the family delighted in that fish. At the banquet of Nasidienus, the muræna was

served up in a gravid state, and swimming in shrimp sauce.

“In a large dish an outstretched lamprey lies,
With shrimps all floating round: the master cries,
‘This fish, Macenas, big with spawn was caught,
For after spawning time its flesh is naught.’”

—*On the Preservation of the Health of Body and Mind.* By Forbes Winslow, M.R.C.S.

RECEIVED FOR REVIEW.

Elements of Electro-Metallurgy. By Alfred Smce, F.R.S. &c. Second edition.

A System of Clinical Medicine. By Robert James Graves, M.D. M.R.I.A. &c.

Transactions of the Medical and Physical Society of Bombay, No. 4.

Outlines of Pathology and Practice of Medicine. By William Pulteney Alison, M.D. F.R.S.E.

ROYAL COLLEGE OF SURGEONS.

LIST OF GENTLEMEN ADMITTED MEMBERS.

Friday February 3, 1843.

R. D. Edgecombe.—G. Beddow.—J. Morrison.—E. J. Shearman.—G. Johnson.—J. Vincent.—T. W. Smith.—C. A. Aikin.—M. Macnamara.—D. Ross.

A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, January 28, 1843.

Small Pox	11
Measles	23
Scarlatina	23
Whooping Cough	39
Croup	13
Thrush	5
Diarrhoea	3
Dysentery	1
Cholera	0
Influenza	0
Typhus	41
Erysipelas	1
Syphilis	0
Hydrophobia	0
Diseases of the Brain, Nerves, and Senses ..	147
Diseases of the Lungs and other Organs of Respiration	312
Diseases of the Heart and Blood-vessels	25
Diseases of the Stomach, Liver, and other Organs of Digestion	71
Diseases of the Kidneys, &c.....	5
Childbed	10
Ovarian Dropsy	0
Disease of Uterus, &c.	3
Rheumatism	2
Diseases of Joints, &c.	5
Ulcer	1
Fistula	1
Diseases of Skin, &c.....	0
Diseases of Uncertain Seat	107
Old Age or Natural Decay.....	83
Deaths by Violence, Privation, or Intemperance	27
Causes not specified	2
Deaths from all Causes	974

WILSON & OGILVY, 57, Skinner Street, London.

THE
LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, FEBRUARY 17, 1843.

LECTURES
ON THE
THEORY AND PRACTICE OF
MIDWIFERY,

*Delivered in the Theatre of St. George's
Hospital,*

By ROBERT LEE, M.D. F.R.S.

LECTURE XVI.

Clinical illustrations of the diagnostic symptoms of pregnancy; of the best method of ascertaining the existence of pregnancy when concealed, complicated, or feigned, and of distinguishing those diseases from pregnancy which often resemble it.

EIGHTY-EIGHT cases have come under my observation in the course of the last sixteen years, in which it became necessary to determine the existence of pregnancy. If you examine the tabular view which has been made of these cases, you will see that in about twenty the pregnancy was concealed; in twelve or fourteen complicated; in eight doubtful, but not concealed; and in two only, deliberately feigned. In all the remaining cases the symptoms did not depend upon pregnancy, but on some morbid state which resembled it, especially upon ovarian and uterine tumors, and on a disordered condition of the functions of menstruation and digestion. I propose in this lecture to illustrate by cases the observations which were made in the last lecture on the diagnostic symptoms of pregnancy, that you may be fully aware of all the difficulties and dangers you will have to encounter in the investigation of cases of doubtful pregnancy, and be enabled to avoid those mistakes which, if committed, will not merely expose you to ridicule and contempt, but the honour and lives of innocent women to destruction.

I. ILLUSTRATIONS OF CONCEALED
PREGNANCY.

I.—On the 12th October, 1838, I was requested by Mr. Babington to see a young unmarried woman under his care in St. George's Hospital, who was reported to have been subject to epileptic fits, loss of power in the lower extremities, and retention of urine for two years. She had very recently left another public institution, where leeches had been frequently applied to the os uteri with a speculum. In passing the catheter Mr. Babington discovered an undefined tumor in the hypogastrium, which he thought might be the gravid uterus. The catamenia had been suppressed for six months. When I examined the hypogastrium she tightened the abdominal muscles so strongly, that the uterus could not be felt distinctly. A slight placental murmur was heard on the left side of the hypogastrium, and a simple pulsation on the right side, corresponding with the arteries of the mother. The foetal heart could not be heard. She reluctantly permitted me to make an internal examination, when I found the os uteri high up, more open than in the unimpregnated state, the lips tumid, the neck shortened, and the body enlarged. The areolæ were broad and dark, and the glands enlarged. On the 8th November uterine contractions came on, and a dead fœtus of five months was expelled.

You may feel disposed to put the question, after hearing the history of this case, what is the earliest period when the existence of pregnancy can be certainly known? In some women who have enjoyed good health, and menstruated regularly before marriage, and who have soon after begun to suffer from morning sickness, and lost the catamenia, and in whom, on making an internal examination, the uterus has been felt enlarged, and the lips of the orifice thick and soft, I have been certain that pregnancy existed as early as the end of the second month. In the greater number of cases

it is impossible, however, to be absolutely certain before the end of the fourth or middle of the fifth month; and even then, if the sound of the foetal heart is not heard, and all the symptoms of pregnancy are not present, and have not occurred in the natural order, the greatest caution is required in delivering an opinion.

II.—A young unmarried lady, closely connected with a family of rank, had been for some time under the care of an eminent physician, for suppression of the catamenia and a tumor of the hypogastrium, which, in spite of the treatment, went on slowly increasing in size. I was requested to examine the tumor, and to give an opinion respecting its nature, and especially to determine if it was connected with the ovaria. The patient being in bed, with the knees drawn up, and the abdomen only covered by the shift, I proceeded to examine the tumor, and from the sensation it communicated to the touch immediately suspected it to be the gravid uterus. By pressing the points of the fingers on the opposite sides of the abdomen firmly for a short time, the movements of the child were distinctly felt. This experiment was repeated several times, and invariably with the same result. I requested her mother to retire for an instant, and informed the patient of her true situation, and that exposure and disgrace would inevitably follow if she attempted longer to conceal it. At first she was in a desperate rage, but before I left the room burst into tears, and confessed that she had been misled. The unhappy occurrence was never, I believe, known to any of the members of her own family, except her mother.

III.—On the 8th October, 1842, a medical gentleman called upon me, and stated that a woman about 30 years of age, of a spare habit of body, applied to him some days before, and said that she considered herself dropsical, and that some ladies in consequence had refused to take her into their service, suspecting she was pregnant. On the 6th October, Mr. — saw her, and on examining felt a hard tumor in the lower part of the abdomen, reaching, however, as high as the navel. She had not menstruated for seven months. The stethoscope was applied to the left side of this enlargement, and the foetal heart was distinctly heard, and Mr. — on the strength of this did not hesitate to inform her that she was pregnant. The areolæ were dark, but not broad, and the breasts full. The pulsations of the uterine vessels were also heard. She said it was impossible that she could be pregnant, and her manner was so calm while assuring him that there was nothing of the sort, and that he must be wrong, that he was almost tempted to disbelieve his senses. An internal examination was not allowed. As she was living in a respectable family, and stood

high in the opinion of a lady of rank, in whose service she had been, Mr. — requested me to see her, with him, on the 8th of October. On applying the points of the fingers of my two hands firmly to the opposite sides of the abdomen, I felt the movements of the child, but rather indistinctly. With the stethoscope, I at once heard the pulsations of the foetal heart, exactly 140 in the minute, on the left side. On the right the whizzing of the uterine vessels was equally distinct. The navel protruded. The areolæ were dark but not broad. On examining internally, the lips of the os uteri were found remarkably thick and soft, the cervix shortened, and the body enlarged, and I could plainly feel, when the finger was pushed against the anterior part of the cervix, the fœtus rolling about within the uterus: the diagnosis was complete, yet she still persisted in declaring that she could not be pregnant, and that we were both completely mistaken. She made no confession, but disappeared soon after to save her reputation, and was delivered privately in three weeks.

IV.—A medical practitioner consulted me about a woman, a housekeeper in a gentleman's family, who had a swelling of the abdomen, which he thought fluctuated and was dropsical: I believe he had little or no suspicion of pregnancy. On pressing the points of my fingers firmly against the sides of the abdomen, the movements of the child were most distinctly felt; the areolæ and glands were fully developed; the cervix uteri was lost, and the ballottement was distinct. The os uteri was indeed so open, that I felt the head presenting. This woman, who maintained that she could not be pregnant, was privately married to the butler, and was delivered in thirty hours of a full-grown child, after I had made the examination.

V.—I was called in the middle of the night to see a young woman, residing in a great mansion, who had suddenly been seized with violent periodical pains in the abdomen, which were supposed for some hours to be spasmodic. No suspicion of pregnancy had been entertained by any one, but when I applied my hand over the abdomen during a pain, the gravid uterus was felt contracting distinctly, and I contrived, as she was in bed undressed, to see the mamme, and observed the nipples surrounded by broad dark areolæ. After removing every person from the apartment, I informed her that she was pregnant and in labour, but she denied this in the most solemn manner. On making the proper internal examination, the nates of the child were found pressing upon the external parts, and in less than an hour she was delivered of a fine living boy. Even when the child was put in her arms, she persisted in denying the possibility of pregnancy, and refused to acknowledge that the child was hers.

VII.—On the 19th November, 1839, Mr. Balderson called me to see a young unmarried woman, who had been under his care for some months, with swelling, and great varicose veins, of the right inferior extremity. He observed that the patient's abdomen was enlarged, but for some time his suspicions of pregnancy were removed by the most positive assurance that menstruation was perfectly regular, which he afterwards discovered to be untrue. I found the abdomen swollen, the umbilicus protruding, and the sides of the belly covered with white lines. The fingers were pressed against the sides, but no movement was felt. The instant the stethoscope was applied between the umbilicus and left ilium, the sound of the uterine vessels, exactly resembling the drone of a bag-pipe, as described by some writers, was heard, but the sound of the foetal heart could not be perceived; the areolæ were broad and dark, and the glands enlarged. By an internal examination it was ascertained that the lips of the os uteri were thick and soft, the cervix shortened, the body enlarged, and that the uterus contained a foetus near the full period. She confessed next day that she was pregnant, and the labour took place in due time.

VIII.—In January, 1840, a young woman came to consult me for varicose veins of the lower extremities, which had only existed for a few months. The catamenia had been suppressed for six months, and there was an evident enlargement of the abdomen. The sound of the foetal heart and uterine vessels left no doubt about the nature of the case, without an internal examination, and she immediately admitted that she was previously aware of her condition.

IX.—On the 20th September, 1839, I saw a young woman in the surgical wards of St. George's Hospital, who was in the sixth or seventh month of pregnancy. She was admitted on account of varicose veins of the legs, and Mr. Robert Brown suspected pregnancy from the state of the veins. Another case of concealed pregnancy was in the hospital, and the pregnancy was likewise discovered by the swollen state of the veins of the legs.

X.—On March 12th, 1828, I was called to an unmarried lady, whose abdomen had been slowly enlarging for several months. No suspicion having been entertained by her medical attendant that she was pregnant, mercury, diuretics, and the strongest cathartics, had been given to remove the supposed dropsy, and tapping proposed. When I examined the abdomen, the fluctuation was as distinct as in any case of ascites, and the right lower extremity was œdematous. Having received a hint from the nurse that pregnancy was possible, I made an internal examination, and found the os uteri considerably dilated, and

the membranes protruding: the labour had actually commenced.

Several cases similar to the preceding have been related to me, in which tapping was performed. One young unmarried woman, who must have been aware of her situation, allowed the surgeon actually to push the trocar into the uterus. She recovered even after this operation, and gave birth to twins, which were dead.

XI.—On the 27th December, 1832, I saw a married woman in St. George's Hospital, who was pregnant, and very near the time of her confinement. The os uteri was slightly open, so that I could not only feel the membranes but the head of the foetus presenting. The areolæ were dark, and the glands around the nipples enlarged. The movements of the foetus could not be felt by pressing against the sides of the uterus, and neither the uterine sound nor foetal heart was distinctly heard. The abdomen of this woman was covered with the marks of great number of leech-bites. She had for several months been treated for ovarian dropsy at a public institution, and fortunately escaped being tapped.

II. ILLUSTRATIONS OF COMPLICATED PREGNANCY.

XII.—In April 1840, I was requested by Dr. James Johnson to see a patient who had a malignant fungoid disease of the os uteri. The catamenia had disappeared for several months, and she had morning sickness, and other symptoms, which made her believe that she was pregnant. In May, the abdomen had enlarged, and the sound of the pulsations of the foetal heart and uterine arteries were distinctly heard, and the movements of the foetus felt with the hand. The areolæ were broad and dark, and the glands around the nipples enlarged.

XIII.—Several years ago, a woman with malignant disease of the os uteri, and who was three or four months pregnant, was admitted into St. George's Hospital. I believe she left the hospital before quickening had taken place, and before the sound of the foetal heart was heard, or the existence of pregnancy ascertained positively.

XIV.—On the 19th of June, 1839, I was requested to see a patient who had been six weeks in the St. Marylebone Infirmary, insane, and who was suspected, from the size of the abdomen, to be far advanced in pregnancy. Auscultation had been employed at different times, but neither the sound of the foetal heart, nor of the blood-vessels of the uterus, were heard. There was no history to guide us in this case, as she had been brought into the Infirmary in a state of insensibility. The mammae and their veins were large, the glands around the nipples were remarkably small, and the

areolæ, though somewhat darker than usual, were not half the breadth observed in some cases of pregnancy. The umbilicus did not protrude. A large tumor filled the greater part of the abdomen, which emitted a dull sound on percussion, and yielded a very unequal resistance on pressure. The fingers were pressed firmly on the sides of the abdomen, but no movement was felt. On applying the stethoscope a little on the left side of the umbilicus, I heard the foetal heart pulsating at the rate of 140 in the minute. No placental murmur could be heard after exploring every part of the uterus. I made an internal examination, and from the enormously distended state of the rectum had great difficulty in reaching the os uteri, the lips of which were soft and tumid, and I could not be sure whether the cervix was much shortened, and nothing like ballottement of the foetus could be felt, or the existence of a foetus within the uterus by this means ascertained. The veins of the lower extremities were not varicose. In a few days labour came on, and was happily completed, but she died afterwards from disease of the brain. Without auscultation it would have been impossible in this case to discover the truth.

XV.—A lady who had been married nineteen years without becoming pregnant, fell with child in the twentieth year, and the foetus died from disease of the placenta in the fifth month. The abdomen ceased to enlarge, the movements of the foetus to be felt, and a thin sanguineous discharge took place from the uterus. The mammae were increased in size, and dark areolæ formed around the nipples. The uterus was felt enlarged, and reaching near to the umbilicus, but no movements could be felt by pressing the uterus, and I could not hear the sound either of the foetal heart or uterine vessels. By an internal examination I ascertained that the lips of the os uteri were thick and soft, the neck somewhat shortened, and the body enlarged, and that there was something moveable contained within the cavity. I had no doubt that the symptoms arose from pregnancy, and that the foetus was dead. This lady had consulted a variety of practitioners, who formed different opinions about the case. In the sixth month labour came on, and a dead foetus, with a morbid placenta, was expelled, and she has since had several healthy living children.

I have met with other three instances similar to the preceding, in which the foetus died soon after the fifth month, and in no cases of pregnancy is the diagnosis, perhaps, more difficult, except in uterine hydatids. In one of these cases the uterus was supposed by the practitioner to be a malignant enlargement of the ovary, and I had great

difficulty in ascertaining the truth, as most of the usual symptoms of pregnancy were wanting, and auscultation afforded no assistance. The areolæ around the nipples, and the soft state of the os uteri, and enlargement of its body, enabled me to ascertain that all the symptoms depended upon pregnancy. In the other two cases, after the most careful investigation, I remained uncertain about the cause of the symptoms, till the uterus contracted and expelled its contents. In one of these I was strongly inclined to think that the symptoms were incompatible with pregnancy.

XVI.—A lady, under the care of Dr. Stodart, became pregnant, and had suppression of the catamenia, and morning sickness, for four months. Irregular discharges of blood then took place from the uterus, which continued for nearly two months, and no enlargement of the abdomen was observed, nor symptom of quickening. In the seventh month the mammae were enlarged, and the areolæ and glands around the nipples were extremely distinct, and milk was secreted. It was ascertained by an internal examination that the body of the uterus was somewhat enlarged, the cervix shortened, and the lips thick and soft, and the orifice slightly open. In the abdomen there was nothing felt like the gravid uterus, and but for the appearances in the mammae I should have felt disposed to attribute the symptoms to some other cause than pregnancy. At the end of nine months precisely from the disappearance of the menses, discharges of blood having occurred repeatedly at intervals, the uterus contracted, and expelled a morbid ovum of three months, with great hæmorrhage.

At one time I thought milk was never secreted without pregnancy, but I have lately seen a patient with Mr. Balderson from whose nipples a fluid having all the appearances of milk could easily be pressed out, though she was not pregnant, and had never been so.

XVII.—A married woman, aged 44, suddenly ceased to menstruate, in November 1839, and soon after began to suffer from constant sickness and vomiting. In December a sanguineous discharge took place from the uterus, and a tumor appeared in the hypogastrium, which continued to enlarge till her admission into St. George's Hospital, where I first saw her on January 31, 1840. A soft tumor, the size of a cricket-ball, and not painful on pressure, filled the brim of the pelvis and hypogastrium, which, if not the uterus, was intimately connected with it. No sound of any kind was heard in this tumor, and it did not communicate the usual sensation to the touch of the gravid uterus. The os uteri was open so as to admit the

finger, and the lips were soft and irregular. There was a constant and profuse discharge of blood. The areolæ threw no light on the case, and I was unable to determine the cause of the enlargement of the uterus, or be absolutely certain that it was the uterus which was enlarged, and explain the symptoms. On the 15th of February, the tumor having diminished in size, and also the discharge, pains came on, and a mass of serous cysts or hydatids was expelled.

The diagnosis is even more difficult in cases of this description than in cases of pregnancy where the fœtus dies about the middle period of pregnancy. In a case which recently came under my care I felt certain that the uterus in the sixth month was distended with serous cysts before any escaped, and gave ergot, with the happiest result. The morning sickness had been experienced, and all the other symptoms, for three months: the uterus then enlarged; profuse hæmorrhage followed; the areolæ and glands were developed; and the uterus rose up into the hypogastrium. By an internal examination, though no fœtus was felt, the thick, soft, dilated state of the orifice, shortened state of the cervix, and enlarged condition of the body, were the circumstances observed in the patient, on which the diagnosis was founded.

3. ILLUSTRATIONS OF THE DISEASES WHICH RESEMBLE PREGNANCY.

XVIII.—In December 1841, I saw, in consultation, a married lady suffering from peritonitis, after exposure to cold during menstruation. She recovered, but at the end of January 1842 the abdomen was larger than natural, and there were irregular attacks of pain. In March she informed me that she was pregnant, but the pain that she occasionally endured was almost unbearable; that the belly was rapidly increasing in size, and that a serous and bloody discharge had taken place from the vagina, which lasted seven days, and that she suspected she was about to miscarry. On the 14th of March I found the hypogastrium occupied by two distinct lobulated tumors, very painful on pressure. No movement was felt on pressure, and no sound heard in these to indicate that pregnancy existed. Internally the hollow of the sacrum was completely blocked up with a great mass, fixed to the sides of the pelvis, which I ascertained to be the lower part of the tumors in the hypogastrium. The os uteri in the unimpregnated state was forced up behind the symphysis pubis, so as to be almost beyond the reach of the finger. I ordered leeches to the hypogastrium, and perfect rest for some days, that I might still more completely investigate the case, before giving an opinion. Having done so three times, at intervals of several days, and being

satisfied about the nature of the affection, I communicated to the husband my doubts about the existence of pregnancy, and suggested the propriety of calling into consultation an eminent practitioner, to be quite sure that I was not wrong. This was done, and after another complete examination of all the symptoms, no doubt was left that extensive ovarian disease existed, without pregnancy. She retired into the country, and being one night in acute pain, a surgeon of great experience and ability was requested to see her. The following day her husband called upon me with a smiling countenance to say that his wife was pregnant, that premature labour was about to take place, and he very politely advised me to be still more cautious in future how I ventured to give a decided opinion in such cases. No labour, however, followed: the tumor increased with great rapidity, and in less than a month, retention of urine, and constant vomiting took place, which proved fatal, in the manner malignant ovarian tumors usually do.

I might relate a number of cases very similar to the preceding, but this is perhaps sufficient to illustrate the subject, and to prove that when a large ovary is mistaken for pregnancy, the error is not "a harmless one."

XIX.—A young woman, who resided in a family at Bayswater, was attacked with tuberculated disease of the peritoneum and omentum. The abdomen enlarged so much that pregnancy was suspected, and the medical attendant of the family was requested to see her, and ascertain if such was the case. He reported that she was in an advanced stage of pregnancy, and consequently she was compelled immediately to quit her situation in disgrace. She obtained by some means a letter of admission into St. George's Hospital, where I was requested to see her, to ascertain if the enlargement of the abdomen arose from pregnancy. The abdomen was as large as it usually is at the commencement of the ninth month; the navel protruded, and there were white lines on its sides. No movements were felt indicative of pregnancy, nor sound heard by auscultation. The mammae were shrunk, and there were no areolæ. The uterus was found on examination to be pressed down close to the outlet of the pelvis by a great mass of disease above, which I thought was probably ovarian. Even after this examination I was requested a second time to look at the case, and be sure that there was no mistake. The diagnosis was correct, and she died in the midst of great agony in the course of a few weeks. There were immense masses of tuberculated accretions occupying the the whole sac of the peritoneum and omentum.

XX.—In 1841 I saw, in consultation, a married woman who was supposed to be not

only pregnant, but in labour at the full period. The uterus was in the unimpregnated state, and the enlargement of the abdomen and pain arose from hypertrophy and inflammation of the liver.

XXI.—A respectable woman, about the age of forty, who had long been married, and was barren, after suffering for many months from symptoms of indigestion, perceived the abdomen to enlarge, and thought she felt the movements of a child most distinctly within it. She was anxious for a family, and flattered herself that she was pregnant, though menstruation continued regular. She consulted a practitioner residing in her neighbourhood, who declared, after employing the stethoscope, that she was near the full period of pregnancy, and that the child was alive, as he could hear its heart beating. Six weeks passed away, but no sign of labour was observed, and the abdomen began to diminish somewhat in size. Four months passed away, yet she could not wholly abandon the belief that she was pregnant, as she still felt the movements; and she then requested me to examine, and say whether she was so or not. The abdomen was greatly distended, and the whole resounded on percussion like a drum. Nothing was heard on the application of the stethoscope, except a quantity of gaseous fluid moving about in the bowels, which had been mistaken for the pulsations of the foetal heart. The uterus was found low down in the pelvis, and in the unimpregnated state.

XXII.—I was requested to see a young unmarried woman in St. George's Hospital, some years ago, under the care of Dr. Seymour, who had suppression of the catamenia, violent fits of hysteria, and whose abdomen was as large as at the full period of pregnancy. The whole belly on being struck emitted so clear a sound that I decided there was no pregnancy, without exposing the patient to an internal examination, of which she had a great horror. A second time pregnancy being suspected in this patient, I made an internal examination, and found the uterus in the unimpregnated state. I believe the case underwent a third investigation, that there might be no mistake, and with the same result. I have seen several other cases of hysterical tympanites simulating pregnancy.

XXIII.—In September 1841, a lady, who was very anxious to have a family, thought she was seven months pregnant, and sent to engage me to attend her in her confinement. When I called upon her, she informed me that she continued perfectly regular at the monthly periods, which led me to suspect that pregnancy did not exist. Having heard of several ladies who continued regular during pregnancy, she thought this was of no importance. I found the abdomen large,

soft, and puffy, and that no part of it emitted a dull sound, like the gravid uterus. Neither the uterine vessels nor foetal heart were audible, and there was no movement felt, though she maintained that the child often moved with great activity within her. The areolæ were large and dark, and the glands enlarged. The uterus was in the unimpregnated state, and she was deeply disappointed when informed that she was not pregnant; and for some months, I believe, still cherished the hope that she was so. The symptoms disappeared in some months by the use of cathartics and tonics, and pregnancy afterwards took place.

XXIV.—On the 14th of March, 1842, I saw a lady, æt. 44, who had been married fourteen years; and had always continued to menstruate regularly till the preceding August, when the catamenia disappeared. Soon after she began to suffer a great deal from pain in the hypogastrium, lower part of the back, irritation of the bladder, and sickness in the morning. Three months after the abdomen began to enlarge, and it went on slowly increasing till March, and movements, like those of a child, were felt at different times so strongly, that she had no doubt but pregnancy existed. The abdomen was large and soft, and resounded every where on percussion. The uterus was in the unimpregnated state, and the symptoms disappeared in a few months by proper medicine and diet.

Dr. Gooch has given a good description of this and similar cases. "The next class of cases," he says, "which I shall describe consists in a torpid state of the uterus, with a flatulent state of the intestines: this is most liable to occur near fifty years of age, when the uterus is about discontinuing its function. At this time menstruation will often cease for several months, and the abdomen becomes distended with a flatulent tumor: the air moving about the bowels gives an inward sensation, which is mistaken for the child; there is often slight nausea, various nervous feelings, and an anxiety to believe in pregnancy as a test of youthfulness. About this age also the omentum and parietes of the abdomen often grow very fat, forming what Dr. Baillie once called 'a double chin in the belly.' This assemblage of symptoms at this age frequently leads to the supposition of pregnancy; but I have met with many similar cases in young women. I have repeatedly known those who, on the return of their husbands after a long absence, have suddenly ceased to menstruate, and grown large about the belly, conclude that they were pregnant, and make preparations for their confinement. I have known the same to happen to single women, who had been secretly incurring the risk of pregnancy: they were generally women of

sickly constitutions, who were very subject to obstructed menstruation; and it is probable that in these the puzzling assemblage of symptoms was the result rather of mental agitation than of sexual intercourse."

XXV.—I was called in the middle of the night some years ago to deliver a woman, in whom it was supposed by the medical attendant that the arm of the child presented. When I went into her apartment she was making a loud noise, as if the child had actually been passing into the world. On making an internal examination I was astonished to find the os and cervix uteri in the unimpregnated state. I immediately took my leave, after stating the fact, and subsequently learned that she had feigned pregnancy, for the purpose of inducing a gentleman to marry her, with whom she had been cohabiting for some time. A speedy separation followed this discovery. In another case of this description, but less flagrant, the patient had the power of throwing the abdominal muscles into a state of rapid contraction and relaxation, so as to produce movements like those of a foetus. She consulted various practitioners, but I never heard that any were imposed upon by this trick.

Queen Mary's case, as related by Hume, affords an excellent example of incipient dropsy mistaken for pregnancy. "The Queen's extreme desire of having issue had made her fondly give credit to any appearance of pregnancy; and when the legate was introduced to her, she fancied that she felt the embryo stir in her womb. Her flatterers compared this motion of the infant to that of John the Baptist, who leaped in his mother's belly at the salutation of the Virgin. Despatches were immediately sent to inform foreign courts of this event: orders were issued to give public thanks: great rejoicings were made: the family of the young prince was already settled; for the catholics held themselves assured that the child was to be a male: and Bonner, Bishop of London, made public prayers be said, that heaven would please to render him beautiful, vigorous, and witty. But the nation still remained somewhat incredulous; and men were persuaded that the Queen laboured under infirmities which rendered her incapable of having children. This infant proved only the commencement of a dropsy, which the disordered state of her health had brought upon her."

A woman who is condemned to suffer death for some crime may plead pregnancy in bar of execution. A widow may feign to be with child for the purpose of defrauding the lawful heir. The laws of the country applicable to such cases will be explained in the lectures on Medical Jurisprudence.

LECTURES ON THE PHYSICAL AND PATHOLOGICAL CHARACTERS OF URINARY DEPOSITS,

Delivered at Guy's Hospital, London,

BY DR. GOLDING BIRD.

LECTURE II.

GENTLEMEN,—In my last lecture I explained to you the several features connected with those physical properties of the urine which appeared to me to be of the greatest importance. In the general and necessarily imperfect sketch I then shadowed forth to you of the recent observations of Professor Liebig and his pupils, I endeavoured to shew my sense of the debt we owe him for the immense industry he has devoted to a subject of such high importance alike to the professional and general public. But I cannot proceed further without raising my warning voice against the too ready adoption of the great mass of theory this philosopher has presented to us. There is something peculiarly attractive in defining the manner in which secretions are formed by the addition or subtraction of ultimate elements; this, it is true, looks very plausible on paper, but who shall dare to state that the great and mysterious agent presiding over the chemistry of the animal body proceeds in such a manner? Humble as my opinion may be, let me, gentlemen, venture to express it to you fearlessly, in spite of the extraordinary prejudice which now prevails among so many of our profession regarding these views. I unhesitatingly declare my conviction that great as is the ingenuity, splendid as is the talent, unbounded as is the industry, which has led the celebrated Liebig to the views he has published in his *Pathological and Physiological Chemistry*, yet that much, very much, will be weighed in the balances of experience, and found wanting. Whilst we shew our respect to him by examining his opinions, I am sure we shall best shew the value we place upon them by rigidly testing their accuracy ere we venture to inflict a serious blow upon the science of medicine by forcing into it theories which may soon be shown to be erroneous. The great Bacon has declared theories to be fatal to science when regarded as idols whose dogmata are infallible; but invaluable to science when regarded in the light of sign-posts to guide us on our way. It is on this principle alone that I avail myself of the hypothetical views of Liebig, or venture to announce to you many of the opinions advanced in these lectures; and as such alone I wish you to receive them; leaving them to stand or fall accord-

ing as they may be found to agree, or differ from the results of more extended experience. I would venture now also to remove from your minds, for the sake of doing justice to others, the serious errors which exist as to the originality of the great mass of Liebig's views as propounded in his book; I do not hesitate to state that there is scarcely an opinion connected with the chemistry of the body in which he has not been completely anticipated by others: he has, in most instances, carried out old opinions to a further extent than his predecessors, and often with a boldness and apparent success which excites our astonishment, but he has in very few instances advanced a really original opinion, or struck out an entirely new path for himself. I need not remind you that the beautiful idea of the formation of uric acid and urea from albuminous and gelatinous tissues, to which I particularly referred at our last meeting, is really original with Dr. Prout, who, long ago, announced it with a caution which does credit to his high

and well-deserved renown in the field of chemical physiology, and which is ever characteristic of sound philosophy.

I shall now, before giving an account of the various deposits occurring in urine, make some remarks on the chemical composition of the healthy secretion. I shall not lay before you even a fraction of the various opinions which have been made public regarding the state in which many of the ingredients of urine exist, nor occupy your time by alluding to the views adopted by many very distinguished chemists who have published the analysis of this secretion. All the very minute chemical details connected with this matter are more interesting in their abstract consideration than in relation to pathology. The most useful analyses of urine in their pathological bearings which I have met with, are those published by M. A. Becquerel in his elaborate work; and the following table, in which I have expressed the results in English grains, presents the result of his labours.

Normal Composition of Urine.

	In Men.		In Women.		Mean of Both.	
	In 24 hours.	In 1000 grs.	In 24 hours.	In 1000 grs.	In 24 hrs.	In 1000 grs.
Weight of urine	19516	1000	21124	1000	20320	1000
Density . . .	1·0189	—	1·0151	—	1·01701	—
Water . . .	18906	968·6	20597	975·	19752	972·
Solids . . .	610	31·1	526·8	24·95	568·	28·
Urea . . .	270	13·8	240·	10·366	255·	12·
Uric acid . .	7·6	0·391	8·6	0·406	8·1	0·398
Fixed salts .	150.	7·69	126·	6·14	138.	6·9
Ammoniacal salts & organic matters }	176	9·26	145·	8·	160·5	8·6

The fixed salts referred to in this table consist of combinations of chlorine, phosphoric and sulphuric acid, with lime, soda, potassa, and magnesia. They exist in the urine in the following proportions:—

	In the urine of 24 hours.	In 1000 grains of urine.
Chlorine . . .	10·15 grs. . .	0·502
Sulphuric acid	17· 3 grs. . .	0·855
Phosphoric acid	6· 4 grs. . .	0·317
Soda	106· 1 grs. . .	5·244
Lime		
Magnesia		
Potassa		
	139·95 grs.	6·918

The results of analyses of urine made by Berzelius, Lehmann, Becquerel, and many other trustworthy observers, agree within very moderate limits; and when we reflect how very readily the composition of the urine becomes affected by slight causes, the only wonder is that the differences between

analyses of urine made in England, Germany, France, and Sweden, have not been more considerable.

In addition to the ingredients above enumerated, many other substances have been stated to be present in small proportions in urine; of these, the colouring matter, in all probability complex in its character and relations, is perhaps the most important. Sulphur also exists in an unoxidised form, probably in a state of quinary combination, as in albumen: this is occasionally evolved in disease in combination with sulphur, communicating a foetid odour and greenish-brown tint to the urine. An excess of this substance occasionally exists, and appears in combination with oxygen, hydrogen, carbon, and nitrogen, as cystic oxide or cystine.

The transparency of urine is occasionally disturbed by the presence of certain substances of very variable composition, which, from their generally falling to the bottom of the containing vessels, are denominated *deposits*. These have been somewhat fanci-

fully divided into four several forms, viz., *pellicle*, *cloud*, *eneorema*, and *sediment*, the hypostasis of the ancients. When the urine, by repose, becomes covered with a thin membrane-like scum, a *pellicle* is said to exist; when the substance which produces the opacity floats in detached portions near the surface it is said to form a *cloud*; and when this falls towards the base it was formerly called an *eneorema*; the term *sediment* or *hypostasis* being applied to a positive deposit collected at the bottom of the vessel. The terms *pellicle*, *cloud*, and *sediment*, are still retained as general terms, but not used for the purpose of distinguishing any specific form of deposit. It very frequently happens that deposits do not become visible in the urine, until after it has cooled down to the temperature of the atmosphere; this is particularly the case with those which are soluble in warm water, as the urates, but more especially the urate of ammonia, a substance which constitutes the great bulk of the red and fawn-coloured amorphous deposits. Sometimes no deposit can be detected until after a few hours' repose, as in the case of those crystallisable ingredients which either fix on the sides of the vessels or appear entangled in the urates of mucus, as in the case of uric acid when present in small quantity, and of the triple phosphate. It is quite possible also for a crystalline substance to be diffused through the urine even in large proportions, and yet on account of the minuteness of the crystals, and of their density not very greatly differing from the fluid in which they exist, they may remain suspended for a very long time. This is remarkably the case with oxalate of lime, which often remains diffused through the urine even for days, and thus frequently escapes detection.

Classification of Deposits.—For the purpose of simplifying the examination of these various deposits, it is necessary to adopt some classification, and I am accustomed to divide all the deposits occurring in urine into the three following classes:—

1. Deposit composed essentially of ingredients formed directly or indirectly from the metamorphosis of tissues—uric acid, urates, uric oxide, oxalate lime, cystine, carbonate of lime.

2. Deposits composed of ingredients of inorganic origin; combinations of phosphoric acid with magnesia, ammonia and lime, silicic acid.

3. Deposits consisting of organised products—blood-discs, pus, mucus, muco-pus, organic globules, ferment, confervoid organisms.

I shall now call your attention to the first class of deposits. I have in my former lecture pointed out the probable manner in which uric acid, with its companion urea, are generated from albuminous tissues. You

will recollect that uric acid is in Liebig's opinion first supposed to be generated, and that by a secondary process the great mass of this substance is resolved into urea. This assumed change, which you must remember is strictly hypothetical, is most perfect in carnivorous rodentia, for in this urine, uric acid scarcely exists; in carnivorous reptiles, on the contrary, this change can hardly be said to take place, for their urine contains no urea, whilst it is actually semi-solid from the presence of bi-urate of ammonia. In man, whilst in health, the great mass of the uric acid generated from the re-arrangement of the elements of albuminous tissues is supposed to be converted into urea; or, at all events, if this hypothesis be denied, the fact must be admitted that whilst 255 grains of urea are thrown out of the system in the urine in the course of 24 hours, but 8. I. grains of uric acid are evolved in the same space of time. This quantity of uric acid exists in all probability in the urine, wholly, or in great part, in combination with ammonia, and exists in such proportions that it remains in solution even in the cold, in the quantity of water naturally present in the urine. If, however, the secondary changes assumed to take place in the normal state, be from diseased action imperfectly performed, it follows that but a portion of uric acid is converted into urea, and a deficiency of the latter, and excess of the former, will appear in the urine, forming a deposit. Certain serious objections to the admission of this hypothesis I shall hereafter allude to.

It is obvious, that as uric acid and its combinations are naturally present in urine, an excess of this body or its compounds will present us with the deposit which may appear in urine with the least possible amount of departure from the natural state. The appearances of the other bodies included in this series (oxalic acid, uric oxide, cystine) admits of a facile explanation, when we compare their ultimate composition with that of uric acid or urea, through which bodies we may readily trace their origin to their primary source, viz. the disorganised azotised tissues of the body. I have already pointed out to you the relation which uric acid and urea bear to blood and muscular flesh, and on what grounds it has been supposed that these ingredients are formed by the re-arrangement of the elements of animal tissues. It now remains for me to shew you the close relation which exists between the other ingredients, in the first class of deposits, to uric acid and urea; and through them to the organised tissues whence they are presumed to be derived. If a tendency to the production of an uric deposit exists, and from some cause a deficiency of oxygen is present, we shall have a sediment formed of that rare and curious substance, xanthic or uric oxide, in the urine. If from the elements of—

	C. N. H. O.	
One atom of uric acid =	10 + 4 + 4 + 6	we subtract the
elements of two atoms of uric oxide =	10 + 4 + 4 + 4	
	2	

we find two atoms of oxygen are left

Hence we may fairly conclude that uric acid and oxide differ from each other only in the different proportions of oxygen which enter into their compositions; two atoms of the latter *plus* two of oxygen being equivalent to one atom of the former.

The presence of oxalic acid, a certainly not unfrequent ingredient in the urine, may be readily accounted for either by a re-arrangement of the elements of urea, or by an oxidat-

ing influence exerted on uric acid: the former hypothesis I ventured to suggest in Guy's Hospital Reports (April 1842), and the latter has been since advocated by Professor Liebig.

On the former view, oxalic acid is supposed to be generated by the conversion of urea and water into oxalic acid, ammonia, and oxygen.

Thus :	1 atom oxalic acid	2	3	C. N. H. O.
	2 atoms ammonia		2 + 6	
	1 atom oxygen		1	
		2 + 2 + 6 + 4	=	<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> $\left\{ \begin{array}{l} 1. \text{ Urea. } 2 + 2 + 4 + 2 \\ 2. \text{ Water } 2 + 2 \end{array} \right.$ </div> <div style="border-left: 1px solid black; padding-left: 10px; text-align: center;"> $\frac{2 + 2 + 6 + 4}{2 + 2 + 6 + 4}$ </div> </div>

If we trace the origin of oxalic acid to uric acid, we may suppose the latter with water and oxygen to be resolved either into oxalic acid, ammonia, and carbonic acid; or into urea, oxalic acid, and carbonic acid.

Thus :	C. N. H. O.		C. N. H. O.	
1 atom uric acid =	10 + 4 + 4 + 6	}	8	<div style="display: flex; flex-direction: column; align-items: flex-start;"> <div>12 = 4 at : oxalic acid</div> <div>= 4 ammonia</div> <div>4 = 2 carbonic acid</div> </div>
8 — water =	8 + 8		4 + 12	
2 — oxygen =	2		2	
	10 + 4 + 12 + 16		10 + 4 + 12 + 16	

Or,

C. N. H. O.		C. N. H. O.		
1 atom uric acid =	10 + 4 + 4 + 6	}	4 + 4 + 8 + 4 = 2 atoms urea	
4 atoms water =	4 + 4		6	<div style="display: flex; flex-direction: column; align-items: flex-start;"> <div>9 = 3 atoms oxalic acid</div> </div>
3 atoms oxygen =	3		10 + 4 + 8 + 13	
	10 + 4 + 8 + 13			

The derivation of cystine is on similar principles readily accounted for, if we grant the existence of an excessive elimination of sulphur in the system, intimately in all probability connected with a strumous diathesis. For if to the elements of uric acid and urea we add sulphur and hydrogen, we have the constituents of cystine with nitrogen, thus:—

C. N. H. O. S.		C. N. H. O. S.		
1 atom uric acid.....	10 + 4 + 4 + 6	}	12 + 2 + 12 + 8 + 4 = 2 atoms cystine	
1 atom urea	2 + 2 + 4 + 2		4	<div style="display: flex; flex-direction: column; align-items: flex-start;"> <div>= 4 atoms nitrogen</div> </div>
4 atoms sulphuretted hydrogen	4 + 0 + 4		12 + 6 + 12 + 8 + 4	
	12 + 6 + 12 + 8 + 4			

Although I have included carbonate of lime among those deposits which result ultimately from the metamorphosis of effete tissue, it must be regarded merely as a secondary result, depending upon the conversion of urea into carbonate of ammonia. If, from

any cause, the force which holds together the elements of the former substance be diminished, combinations with the elements of water will ensue, and carbonate of ammonia will be the result.

For—	C N H O		C N H O	
1 atom urea =	2 + 2 + 4 + 2	}	2	<div style="display: flex; flex-direction: column; align-items: flex-start;"> <div>4 = 2 atoms carbonic acid</div> <div>2 = 2 atoms ammonia</div> </div>
2 „ water =	2 + 2		2 + 6	
	2 + 2 + 6 + 4		2 + 2 + 6 + 4	

As soon as this change occurs in the urine, carbonate of lime would necessarily be precipitated, and appear as a deposit, by the decomposing influence of the carbonate of ammonia on the salts of lime naturally present in the urine.

Let me once more, gentlemen, beg of you to receive these formulæ merely in the light of illustrations, to connect certain phenomena with their pathological indications. For, however satisfactory such formulæ may appear, but one of them only can be shewn to be absolutely correct representations of what really has been proved to occur in the urine. I refer to the last, shewing the formation of carbonate of lime by the decomposition of urea. By a parity of reasoning, supported chiefly by the close resemblance, in chemical composition, between oxalic and carbonic acids, the formula which shews the conversion of urea into ammonia and oxalic acid is also, in all probability, a correct representation of what really occurs in the urine. The rest can only be regarded as unproved hypotheses.

First class of deposits (non-organized products of organization).—I shall first call your attention to those deposits which we meet with in urine, composed chiefly of uric acid. The normal proportion of this substance, which leaves the system in twenty-four hours, is 8·1 grains. There can be no doubt of the correctness of Dr. Prout's opinion, notwithstanding the statements of many continental writers to the contrary, that the greatest proportion, if not all this quantity, exists combined with ammonia. Uric acid requires, according to Dr. Prout's accurate observations, 10,000 times its weight of water at 60° for its solution; whilst there does not exist in urine quite 2500 its own weight. Hence it is utterly impossible for it to exist in a free state, without supposing the existence of causes modifying its solubility, which the state of chemical knowledge by no means justifies. If, on the other hand, the uric acid exist in combination with ammonia, we see that it must necessarily remain dissolved at ordinary temperatures in the water of the urine. Urate of ammonia is soluble in 480 times its weight of water, and the 8·1 grains of uric acid, being the mean quantity secreted in twenty-four hours, requires, on account of its weak saturating power, but 0·82 grains of ammonia to neutralize it; and the 8·92 grains of urate of ammonia thus produced require but 4·382 grains of water for solution. Hence it is obvious that there are more than four times the quantity of water present in the urine than is necessary to hold the acid dissolved, if it exist in combination with ammonia. The most plausible objection which you will find urged against Dr. Prout's hypothesis is

that advanced by Becquerel and others—viz. that a single drop of nitric acid is sufficient to separate all the uric acid contained in a considerable quantity of urine, which could hardly be the case if it really was combined with a base. This, however, is an objection much more apparent than real; for having learnt that 8·1 grains of uric acid are present in 19752, or rather more than forty ounces of urine, it is obvious that less than a single drop of nitric acid ought to cause all the uric acid present in half a pint to be deposited in crystals, if it existed in combination with ammonia, or, indeed, any other base. For the quantity of ammonia required to hold the uric acid dissolved in half a pint of urine would be about 0·2 grain, which would be exactly neutralized by about 0·8 grain of fluid nitric acid, or less than a single drop.

If healthy urine be slowly evaporated in an air-pump vacuum, it soon becomes turbid, from the formation of clouds of urate of ammonia. The same thing occurs if healthy urine of rather high specific gravity be immersed in a freezing mixture. These facts, taken collectively, appear to me to be quite conclusive in favour of Dr. Prout's view of the manner in which uric acid exists in urine.

We may find uric acid, or its compounds, present as deposits in urine, without their really existing in excess; for if the quantity of water excreted from the urine falls below one-fifth the natural proportion, urate of ammonia will necessarily appear on cooling, in consequence of there not being sufficient water present to hold the whole dissolved. Again, if a free acid be eliminated from the system by the kidneys, this will combine with the ammonia, and cause the uric acid to be deposited as a crystalline sediment.

From numerous observations it appears that the quantity of uric acid excreted in the course of twenty-four hours may vary from six to ten grains, without shewing any very material deviation from health. In all states of general febrile excitement occurring in persons previously healthy, an increased excretion of uric acid, free or combined, occurs: this is peculiarly the case in many functional or organic lesions of the liver or lungs, especially if the cutaneous exhalation be obstructed. In many cases of heart disease this also occurs. In one of enormous hypertrophy, in a lad lately under my care, upwards of twenty grains of uric acid appeared in the course of twenty-four hours in the form of a coarse crystalline deposit, independently of a portion present in solutions combined with ammonia. As a general rule, in adynamic states of the system, and diseases in which ammonia preponderates,

the proportion of uric acid falls much below the healthy average.

Urine depositing uric acid is generally unusually acid, and possesses a high colour, often increasing with the amount of deposit. The latter is always more or less crystalline, and does not disappear on warming the urine, which at once distinguishes it from deposits of its saline combinations. The specific gravity is generally rather high, usually exceeding 1.020: and in these cases an excess of urea is often met with; so that, on adding a few drops of nitric acid to some contained in a watchglass, crystals of nitrate of urea are formed in a short time.

Urine depositing urate of ammonia varies extremely in tint, according to certain modifications of the colouring matter present. The most frequent modifications are the following:—

Firstly, A rather pale-coloured urine of moderate density, as about 1.018, which, by cooling, lets fall a copious fawn-coloured deposit, resembling so much bath-brick grated into the fluid, and readily disappears on applying a gentle heat to a little contained in a spoon. This is frequently of transient occurrence, and appears so constantly on any interference with the cutaneous transpirations, that every old woman will diagnose the existence of a "cold" when this state of urine is present.

Secondly, The urine, when febrile excitement prevails, often assumes a brown hue, varying from the colour of ale to that of brandy, generally being of high specific gravity, often above 1.023, and depositing, on cooling, a reddish brown deposit of urate of ammonia, constituting one of the forms of lateritious or brick-dust deposit, which, like the variety I have just described, readily disappears by heat. It is this form of urine which is rendered opaque by the addition of a drop of nitric acid, especially if added before all the urate has been deposited. This opacity depends on the separation of uric acid in an amorphous form, and may readily be mistaken at first sight for a deposit of albumen. This phenomenon is constantly presented by the urine passed in the first stages of continued fever.

Thirdly, In well-marked affections of the portal system, especially when connected with organic disease of the liver or spleen, or when suppuration, especially of a strumous character, is going on in the body, the urine is found to possess, in many instances, a deep copper colour, often verging on crimson. This, I believe, depends on the presence of a peculiar colouring principle, to which I have ventured to give the conventional term of *purpurine* (Guy's Hospital Reports, 1842), to distinguish it from the purpurate of ammonia of Dr. Prout, the murexid of Liebig,

which I confess I have been quite unsuccessful in detecting in the pink deposits of which it was considered the pigment. When urate of ammonia is deposited from such urine, it combines with the pink pigment, forming a kind of lake, and which generally but partially disappears on the application of heat to the urine, unless a little water be previously added. This deposit varies in hue from a pale pink to a most splendid purple. To appreciate the beauty of the colour, the deposit should be collected by filtering the urine through white blotting paper. One of the specimens I now shew you is from a patient with inflammatory jaundice, and the other from a person sinking of phthisis. Many of you have had an opportunity lately of seeing a fine example of this in a patient of Dr. Addison's, in Billet ward, labouring under a well-defined tumor in the region of the liver, attended with obscure fluctuation; and whose case, as many of you are aware, attracted so much interest. In this case, as in most others where this splendid pigment is secreted, the pink deposit did not always appear; the urine, however, retaining its deep tint. This arises from no more urate of ammonia being, on some days, present than can remain dissolved; if an excess occurred, it would, in the act of being deposited, carry down with it a considerable portion of the colouring matter.

In the very case to which I have referred, copious deposits of the most splendid purple were present on December 15th, whilst on the three following days they were absent; the urine retaining, however, its crimson hue. Of this clear urine the man passed on December 16th one pint and a half, = 13125 grains, of specific gravity 1.002. By the process I pointed out to you at our last meeting, you can readily calculate the amount of solids escaping in the urine, amounting to 476 grains, being 134 grains below the healthy average. On the addition of nitric, hydrochloric, or acetic acid, to this urine, a copious precipitate of deeply coloured uric acid occurred. Liquor potassæ lightened the tint of the urine without producing any visible deposit. It was not affected by heat. If you take the trouble to evaporate a specimen of urine possessing this deep-brownish-colour, and digest alcohol on the extract, you will obtain a fine purplish crimson solution exactly resembling in tint that obtained by digesting the deposit itself in the same menstruum. Some doubt has existed regarding the real nature of the pigment colouring the urine and the deposit. Dr. Prout is inclined to consider that the colouring agent is purpurate of ammonia (murexid of Liebig and Wohler). From a very careful investigation of this matter, which I made nine years ago in conjunction

with Dr. Brett, I feel convinced that the view taken by Berzelius and some others is the most correct. You will find the result of our experiments published in the *MEDICAL GAZETTE* for 1834. I have since repeated these observations on many fine specimens of the crimson deposits, and invariably met with the same results. As, however, Dr. Prout has, in the last edition of his valuable work, maintained his former opinion, I have felt it necessary to allude more fully to this matter than I should otherwise have done. I may remind you that urate of ammonia artificially coloured with the purpurate of

ammonia (murexid) does not become de-colourized by digestion in alcohol, whilst the natural crimson deposits readily yield up their pigment to this menstruum. When aqueous solutions of these two colouring matters are treated with different re-agents, the results obtained are so satisfactory that, in my opinion, they can scarcely leave a doubt as to the natural colouring matter (purpurine) differing *toto calo* from murexid. The table I now place before you shows the results of some experiments of this kind: the solutions of the two colouring matters were of nearly equal intensity.

Reagent.	Purpurine.	Murexid.
Dilute sulphuric acid	No alteration of colour until heat is applied, when it becomes slightly paler	Entirely destroys the colour
Liquor potassæ	Greenish-brown colour	Purplish-lilac colour
Hydrochloric acid	No alteration of colour in the cold	Destroys the colour instantly
Ammonia	Greenish-yellow colour	Deeper crimson
Carb. Potass	Yellow colour	Deeper pink
Proto-chloride of tin	No change of colour	Destroys the colour
Hot acetic acid	No change of colour	Destroys the colour

I venture to think, gentlemen, that a glance at this table will be sufficient to show the correctness of the position I have assumed regarding the peculiar nature of the colouring matter of the pink deposits.

Fourthly, Perfectly, or nearly, white deposits are occasionally met with in pale specimens of urine, especially in gouty subjects. This deposit consists for the most part of urate of soda, and attention has been particularly directed to it by Dr. Prout. It is certainly of unfrequent occurrence.

Deposits of urate of ammonia frequently contain crystals of free uric acid, which become perfectly obvious by gently warming

the urine to dissolve the amorphous deposit. They likewise frequently co-exist with oxalate of lime, and but very rarely with the phosphates. I have frequently met with these deposits of urate of ammonia, falling wholly or partly in a gelatinous state, so as to resemble masses of mucus: this resemblance is often remarkably striking. The application of heat, or the addition of a drop of liquor potassæ, by dissolving the deposit, at once distinguishes it from mucus.

At our next meeting I shall draw your attention to the microscopic appearance presented by uric acid deposits, and to the indications they afford in practice.

PHRENO-MAGNETISM.

To the Editor of the Medical Gazette.

SIR,

A MR. SPENCER HALL has recently been delivering, in the city of York and other places, a series of lectures, illustrated by experiments, on what he calls "phreno-magnetism." As these lectures have created considerable sensation, and as the said Mr. Spencer Hall has at least magnetised the purses of the worthy but somewhat credulous citizens of York to some purpose, I have deemed the subject not unworthy of a few observations.

It may be thought by some persons that the theory promulgated by this charlatan is too ridiculous to require serious refutation. I may or I may not agree in that opinion; but this fact is to me quite evident, that things which in themselves are trifling may be swelled and magnified into importance where a large portion of public attention is bestowed upon them. In Sheffield, in Wakefield, and in York, a great number of people, and, *mirabile dictu*, very many of them members of the medical profession, have been infected by the phreno-magnetic mania, and they go about from house to house see-sawing with their hands, darting

with their fingers, staring with their eyes, and tickling up the craniological bumps of their male and female acquaintances. It therefore becomes the duty of the press to take up the matter, and abate the nuisance by unmasking the imposition.

I write, not as a medical man, but as a member of a profession in which I am accustomed to inquiries, the results of which are determined by the amount and credibility of evidence which are brought to bear on the one side or on the other. Before I proceed to the remarks which I propose to make on the subject the title of which I have prefixed to this article, I would preliminarily observe, that I am not a determined sceptic as to mesmerism, or phrenology, or any other theory which—my mind being acted upon by habitual modes of thinking, and my opinions influenced by old-fashioned notions of things, which modes and notions *may*, and very probably *are*, erroneous—has to me, upon the first face of it, an appearance of absurdity. I say I am not a determined sceptic; I would not prejudge; but I will never consent to give my belief to any novel doctrine or theory, upon any subject whatsoever, without having full and satisfactory proof of the correctness of that doctrine or theory. I require evidence—clear, undoubted, unsuspected, and unsuspicious evidence. Dr. Johnson has written an admirable essay on the danger of hastily ridiculing the plans and propositions of projectors, seeing what extraordinary discoveries have been made in science—what wonderful inventions have been produced in art. Now the most improbable and apparently impossible theories have been proved to be founded on the immutable principles of scientific truth. It is extremely unsafe, and argues a mind contracted by ignorance, or fettered and enslaved by the prejudices of a partial education, to pronounce decisively, and, as it were, *ex cathedra*, against any system which, untested and unexamined, appears to our finite perceptions and imperfect vision ridiculous. One of the most extraordinary discoveries ever made in science was, perhaps, the magnet. If the fact were now stated for the first time, that a needle, after having undergone a certain process, would point always to a particular quarter, would not that

statement be heard with doubt—would it not be received with caution, would not a circumstance so mysterious, so irreconcilable with every known principle of science, seem of itself to demand the strictest scrutiny, to require the most undeniable evidence of its truth? It is now known to be a fact—*why* it is so we have yet to learn. It is a mystery which remains to be unfolded by some future revelation. If any one should now profess to doubt the power and quality of the magnet, we should set him down as an ignoramus or an idiot. The projected discovery of America by Columbus was laughed at. Gallileo was persecuted because he said that the earth revolved round the sun, and that the latter was stationary. Newton's theory of light, and his statement that white was a combination of all the colours, were at first scoffed at. The use of vaccination as a remedy for the small pox, when introduced by the immortal Jenner, was viewed as chimerical. For my part, instructed by the lessons of the past, I will never ridicule any project, however preposterous it may appear. I will even admit that the transmutation of metals may not be impossible, nor a voyage to the moon per balloon via space impracticable. Such are my sentiments. But be it understood that, whilst I dismiss scepticism, I suspend belief: whilst I refuse to scoff, I hesitate to applaud. I declare myself to be in that mental state which Locke recommends to all those who are desirous of arriving at the truth—in that state in which I am indifferent to the result, whether that result be the irrefragable proof of the truth, or the falsehood of a theory. I will, however, use my best efforts, when the occasion seems to call for them, to expose imposture and unveil deceit, to tear from ingenious falsehood its plausibility, and hold up to execration and derision swindling craft and designing quackery. There was a time, and that not a distant one, when all the world believed in witchcraft. This belief was not confined to the poor, the miserable, the ignorant, but was most confidently entertained by the wealthy, the intelligent, and the learned. In the year 1664 two poor old women, called Rose Cullender and Amy Deeny, were tried at Bury St. Edmunds before that great, good, and learned judge,

Sir Matthew Hale, convicted of the supposed crime, and afterwards executed. The summing up of the learned Chief Baron on that occasion is curious, and is a lamentable proof to what human weakness the most intellectual and cultivated men may be subject, to what extent they may be duped by artful imposture, even when practised by the most contemptible and the most degraded of beings. He said, "That they had now two things to inquire after. First, whether or no these children were bewitched? Secondly, whether the prisoners at the bar were guilty of it? That there were such creatures as witches he made no doubt at all; for, first, the Scriptures had affirmed so much; secondly, *the wisdom of all nations* had provided laws against such persons, which is an argument of their confidence of such a crime. And such hath been the judgment of this kingdom, as appears by the Act of Parliament, which hath provided punishment proportionable to the quality of the offence; and desired them strictly to observe their evidence, and desired the Great God of Heaven to direct their hearts; *for to condemn the innocent and let the guilty go free were both an abomination to the Lord.*" During the trial various experiments were made on the children to prove that they were bewitched, amongst which take the following:—"There were some experiments made with the persons afflicted by bringing persons to touch them; and it was observed that when they were in the midst of their fits, to all men's apprehensions deprived of all sense and understanding, *closing their fists in such manner as that the strongest men in the court could not force them open*; yet by the least touch of one of those supposed witches, Rose Cullender by name, they would suddenly shriek out, opening their hands, which accident could not happen by the touch of any other person. And lest they might privately see when they were touched by the said Rose Cullender, they were blinded with their own aprons, and the touching took the same effect as before."

Can any person of the present day doubt that this was imposture? Is there a single jurymen who would not reject with disgust the whole of the evidence which was adduced on that trial, and on which those two poor, infirm,

friendless old women were convicted and hanged? Yet men of intelligence,—men of learning—men experienced in all the tricks, chicanery, and falsehood, which are exhibited in courts of justice—men acquainted, from long study and observation, with all the turns and twists, the quirks and quiddities, the lights and shades, of the human mind—were deceived by these, and others of a similar description; and although humane, benevolent, and merciful, labouring under that deception, pronounced the extreme sentence which the law can inflict—that of forfeiture of life. The present age is more enlightened: we do not now admit the possibility of witchcraft; but are we proof against every imposture, are we incapable of being deceived? When witchcraft was believed, men lent a credulous ear to every tale of wonder; they were predisposed to be convinced. Now, when it is thought to be impossible, no statement of its effects would be credited; and therefore no statement is made. Those who believe in mesmerism are precisely in the situation of those who believed in witchcraft; the *cause* being fully credited, every *effect* is received on the slightest evidence. There is a predisposition to be convinced, and imposture is therefore easy. There are two features in mesmerism calculated to induce belief: these are, the *wonderful* and the *new*. The latter excites curiosity, the former a secret wish that it may be true. The one feeling induces search, and the other faith. There was a time when astrology was ranked amongst the sciences; and even yet it has some believers. Kings and nobles had their horoscopes cast; and the professors of the swindling mummery were loaded with wealth and honours. When it is considered, then, what gross deceptions have been practised in times past, and are practised in the present day—witness Mormonism in America, which has upwards of a hundred thousand professors—it behoves us to be extremely cautious how we receive as truth the theories of men, some of them doubtless honest, but enthusiastic; others, there is as little doubt, knavish and self-interested. Amongst the theories lately propounded are phrenology and mesmerism, or, as some persons denominate it, animal magnetism. I prefer the former designation; for it is at any rate expressive

of a fact, Mesmer being the name of the German empiric who practised it. The latter is only expressive of an opinion, the correctness of which remains to be proved. Now I believe that phrenology is true to a certain extent. I believe that a man, to possess sense, must possess a fair modicum of brains. I do not say that the human head may *not* be mapped; that every faculty and every passion do *not* reside in some particular portion of the brain; that the place in which each faculty and each passion is deposited has *not* been discovered; and that the phrenologist can *not* unerringly place his finger upon it. I do not pronounce these negations, but I require proofs in the affirmative. I believe that, to a certain extent, there is truth in mesmerism: I believe that, by a peculiar monotonous motion (if the term monotonous may be applied to motion), or by keeping the eye fixed for a length of time on some particular object, a state of coma, or even catalepsy, may be induced. I do not say that a person under the effects of mesmerism can *not* see with the back of his head, or with his great toe, or with his knee-bone; I do not say that he can *not* play a tune upon every instrument, though he never before played upon *any* instrument; that he can *not*, by certain motions with his hands, throw another person, sitting in another room, into a profound sleep. I do not say that a piece of gold, or a piece of nickel, after having been held for a short space within the palm of one man, and then put into the hand of another, will *not* produce in that other coma, clairvoyance, sleep-waking, and all the rest of the characteristics and features of the mesmeric state. I do not say that all the effects above mentioned will not or can not be produced; all that I require is evidence that they *can*. But, say the disciples of La Fontaine, of Elliotson, of Mesmer, you *have* evidence. I am dissatisfied with it. I am (I hope) of an ingenuous nature; I am extremely open to conviction; I have rather a tendency to the credulous; but I am not gullable. Let me have honest evidence, proceeding from competent witnesses—competent both on the ground of intellect and disinterestedness—and I will believe. Mr. Spencer Hall (for he claims to be considered the originator of the theory) has struck out a new

path. Disdaining the somewhat beaten tracks of Gall and Spurzheim, of Mesmer and Elliotson, he has carved for himself a new road to fame—and may I not also say to profit? Out of the materials supplied by these men he has moulded a fresh *science* (!) combining the principles both of mesmerism and phrenology. To this *science* he has given the compound name of phreno-magnetism. But in this prolific age of theories why should I be excluded? I have discovered a new science, which consists of the *scientia* or knowledge of Mr. Spencer Hall; and I have bestowed upon it the title of *Phreno-Spencerian-magnetic humbug*. Mr. Spencer Hall was formerly a journeyman printer in the York Courant Newspaper Office. The public will be rather surprised, and indeed it is somewhat paradoxical, that after having been a man of letters, he should be an illiterate man. But paradoxical as it may sound, it is nevertheless the fact. He himself confesses that he is “a plain-spoken man,” and not “an acute elocutionist;” and he apologises for his limping oratory, saying, “I cannot speak well for them myself, *however well I may be able to write for them in private*, as in writing we have to employ a different class of faculties to those employed in public speakers.” I really don’t see why he should write well, and speak badly, because in the one he employs a different class of faculties from those which he employs in the other. But allowing that, he will, I think, admit that the rules of grammar require to be observed in both; and that if a man can write grammatically, he can also speak grammatically. There are some things, certainly, which are not perceived in written compositions; for instance, the absence of the *H* without leave, when its presence is really a *sine qua non*; and the most exasperating “exasperation” of it, when its company may be dispensed with. The “Sun” newspaper has a paragraph relating to this gentleman, of which the following is an extract:—“Many of our readers, who by this time have, no doubt, been deeply interested by our report, taken a few days ago from the *York Courant*, of Mr. Spencer Hall’s lecture on phrenology and magnetism, in that city and Sheffield, in the latter of which *place* he holds a respectable situation, will be surprised to hear that he is the

identical individual whom we noticed a short time since in connection with our popular literature, as the "Sherwood Forester." Under that designation he has risen, by original strength of mind and close application, from the humble obscurity of a one-storied Nottinghamshire cottage, to a respectable rank in the world of letters; his "Forester's Offering," and "Rambles in the Country," having been very widely read and appreciated. We understand that he receives the title of "a new Wizard of the North." * * * He is, we are informed, expected to visit the metropolis, in order that his startling observations and discoveries in science may obtain the consideration which, *if true*, they certainly merit." The "Sherwood Forester" of the present day beats his prototype, Robin Hood, hollow. He levies his contributions with greater security, and decidedly shoots with a much longer bow. When he visits the metropolis, I sincerely trust he will be taken to the *Greenwood*; not that which erst was situated amidst the romantic wilds of Yorkshire and Nottinghamshire, but that which may be seen daily on the bench at one of the police offices. The "Wizard of the North" may be assured that the law inflicts now no punishment for witchcraft, but it does inflict a punishment, and a severe one, on those persons who obtain money under false pretences.

I shall now proceed to his lecture at York, or rather to his illustrations, for it would positively be a waste of time and paper to criticise the crude, indigested, indigestible nonsense which he uttered. After his lecture, then, was finished, he commenced his experiments, and on a sign being made by him, forth issued from the audience a loutish looking lad, who might be perhaps about twenty years of age. This youth we were informed was by profession a tailor. The phreno-magnetiser having placed him in a chair, began to move his hands, after the manner of the mesmerisers, and in a few minutes threw him into a state of coma and catalepsy; that is, he pretended to do so. Now before I proceed a step further, I beg leave to observe, without mincing the matter in the least, that in my firm conviction the whole of Mr. Snip's performance was rank imposture. I do not believe that he was

thrown into a mesmeric state at all; I do not believe that any one of the organs pretended to be excited was ever brought into activity, supposing the latter to be possible. Mr. Spencer Hall first called into operation the organ of veneration, and the lad fell upon his knees, and lifted up his hands as though he were engaged in prayer. Next he touched up acquisitiveness and secretiveness, and he filched, not "from the shelf a precious diadem," but the snuffer tray, and "put it into his pocket." Then conscientiousness, when repentance, that "tender sprite," touched his guilty soul, and he returned it. Then self-esteem, and he buttoned up his coat (that being the way I suppose that tailors exhibit a good opinion of themselves,) put something to his *sinister* eye resembling a quizzing-glass, and strutted about the platform. Then aversion, and he turned up his nose and snapped his fingers at his patron. Then benevolence, and he gave him a shilling. Then alimentiveness, and he took an orange out of his pocket and began to suck it. Then form and imitation, and a paper and pencil being put before him he began to write. Then eventuality, and he "pitied the poor nuns who were confined so." Then language, and he recited "near yonder copse where once a garden smiled, &c." Then tune, and he straightway whistled and hummed a tune. Then industry, and he moved his elbows as though he were stitching a pair of small-clothes. Then philo-progenitiveness, and he affected to nurse a baby, and so on to the end of the chapter. Now it was rather a singular coincidence, that for the manifestation of alimentiveness, he should *happen* to have an orange in his pocket; for that of acquisitiveness, the snuffer-tray should be so placed that he should be able to walk straight up to it, and put his hand upon it; and for that of benevolence, he should happen to recollect (all his other faculties, be it remembered, were asleep, benevolence alone being awake,) that in his left side waistcoat pocket there was a shilling. It was fortunate he did not put his hand into the right side pocket, or into his coat pocket, for then probably the return would have been *nil*, but that he put it into the very pocket in which the odd shilling was contained for that particular purpose. The platform which was raised, was of very limited dimen-

sions, and considering that circumstance, it *did* appear to me somewhat extraordinary that the young man, with his eyes shut, should be able to strut about under the influence of self-esteem, aversion, &c., and yet never transgress its boundaries. The organ of language I have always understood is that faculty which enables a person who possesses it to speak with fluency; to utter a number of words without reference to the sense or nonsense which they convey, those words being his own. I have never supposed (but I may have been mistaken,) that a full development of that organ enabled him simply to recite the words of others, which he had committed to memory. But Mr. Wilmot, such being the name in which the young Knight of the thimble rejoices, when his organ of language was excited, attempted to spout a quotation from Goldsmith's "Deserted Village." But why, I ask, *why* was he not perfect in that quotation, *why* did his memory fail him, and *why*, I emphatically ask, *did Mr. Spencer Hall prompt him in a whisper?* Yes, sir, I state it as a fact, for the truth of which I pledge my honour, and to which I am ready to bear testimony under the sanctity of an oath, should it be required, that Mr. Spencer Hall did prompt him in a whisper, which whisper was evidently not intended for the ears of the audience, but which was nevertheless distinctly heard by me. This fact alone proves that the whole performance was a trick, a juggle, a cunning device to raise money. It proves that all his manifestations were a mere fiction, a parable of the *bad sower*, conveying this moral, that the most intelligent men are liable to become the dupes of the most ignorant and contemptible. Whilst the first actor was going through his paces, the second one, then in the middle of the room, was heard to say, "I shall *perform* much better when my turn comes."

We have been informed by Elliotson, and others learned in the *science*, that a patient when he is awake is utterly unconscious of what has taken place when he was in a state of mesmeric coma. How, then, could this man know that he would perform better? However, he told the truth, he did perform better; he was evidently the better actor of the two; he had been more carefully trained, or his natural talent for the

imitative was greater. I am much mistaken if that youth has not been a strolling player, rehearsing perhaps in the characters of George Barnwell, and Jack Sheppard, the acts which he has now begun to play in the drama of real life, and destined not improbably to a similar exit to that of these worthies. His manifestations of tragedy, comedy, self-communion, were all evidently studied, though absurd. In exhibiting tragedy he endeavoured to throw himself into the attitude of the tragic muse, in embodying comedy he laughed idiotically, and spreading out his hands placed the extreme end of his thumb to the tip of his nose—a low and vulgar action, not in the least comic, and calculated to excite instead of a feeling of risibility an almost uncontrollable desire to kick him out of the room. Self-communion was represented by his seating himself upon a chair with a slow and dignified motion, placing one leg across the other, his elbow upon his knee, and his head upon his hand, having his forefinger in a perpendicular position, and the thumb under his chin. What is firmness? I understand it to be a mental fixedness, an innate resolve not to be shaken; a determination not to be moved. It is purely mental, it is the immutability of the spirit within, the existence of which is not expressed by corporal actions, at least very slightly so. There is a compression of the lips, a calm sternness of the eye, which express the soul's deep resolve, but nothing more. If any one wishes to see firmness expressed, let him look at the picture of Napoleon; there it is in God-like sublimity. How did Spencer Hall's buffoon exhibit it? He planted his feet upon the ground with tremendous vehemence, and threw up his arms as if he were going "to pluck bright honour from the pale-faced moon," or as if he were challenging the "Herald Mercury" to a boxing-match. I thought it not unlikely that he had seen Ducrow's representation of Ajax defying the lightning, and that this was a poor imitation of it—to me, it appeared as much like firmness as a horse chesnut is like a chesnut horse. Now if the various faculties which were pretended to be excited had been really excited, every manifestation would have been natural; for not art, but nature, would have spoken, and her voice would have been echoed by a

responsive chord in the bosom of every one present. The organs of dancing, climbing, acquaintanceship, swimming, and destructiveness, were all in their order brought into operation, and he accordingly danced, climbed, nodded to the company, swam, and broke a chair in pieces. Mr. Spencer Hall attempted to give a specimen of clairvoyance, and he told the company that his subject could see with the back of his head. A medical gentleman signified that he would put him to the test. He took out his watch, and, altering it from 10, that being the period of the evening, to a *quarter past 7*, he put it behind the young man's head. "What is that which is held behind your head?" A watch, of course; he heard the ticking. "But what a clock is it?" Aye, there's the rub. The impostor did not know that the time of the watch had been altered. What is his answer? "Twenty-six minutes to 10." Did he really see the watch? If he did, he would also have seen that the time was a *quarter past 7* by the watch, though it was not by the night. It is evident that he did *not* see it: then was he a liar and impostor. The straw slowly and silently floating upon the broad bosom of the mighty river indicates its course; a feather sailing through the air informs us from what quarter the gentle breeze proceeds, which, in an hour or two, may rise into a fearful hurricane, and spread devastation far and wide. So does a straw, a feather, every trifle, enable us to detect imposture, fathom fraud, and penetrate deceit. The fact of Spencer Hall's whispering to his tool, and the fact of the young man saying it was 26 minutes to 10, when it was a *quarter past 7*, these two facts clearly prove that both master and man are impostors. If they impose, or attempt to impose, in one thing, what security have you that they have not imposed in everything? None whatever. But some, zealous in defending this new theory, may say it was impossible so to act. Sir, I have shown you that mere *children* acted in such a manner; that the great Sir Matthew Hale was deceived by them, and, labouring under that deception, sentenced two poor old women to an ignominious death. I sum up by declaring it to be my firm conviction that the whole of Mr. Hall's performance was a juggle and a trick, and that he has

obtained money from the people of York and other places by exhibiting so-called manifestations of the truth of phrenology and mesmerism, which manifestations were feigned, acted, and false.—I am, sir,

Your obedient servant,
A BARRISTER ON THE NORTHERN
CIRCUIT.

[The writer of the above has furnished us with his name; and a well-known physician also guarantees the accuracy of the statements.—*Ed. Gaz.*]

MEDICAL GAZETTE.

Friday, February 17, 1843.

"Licet omnibus, licet etiam mihi, dignitatem
Artis Medice tueri; potestas modo veniendi in
publicum sit, dicendi periculum non recuso."
CICERO.

QUACKERIES OF THE DAY.

WHILE the alchemists were enthusiastically consuming their lives and fortunes, and melting down the ingots of their disciples, in seeking for the philosopher's stone and the elixir of life, medical men looked gravely on, giving more or less credence to the promises of the adepts, according as their own temperaments, education, and pursuits, favoured or counteracted a disposition to credulity; and though no doubt often disposed to be angry with those who promised to render the art of healing needless, and to make gold so plentiful that fees would be worthless, yet they wisely adopted the products of the laboratory into their *materia medica*, mending their own rough roads to longevity with the refuse of the furnace and the crucible, and lining their own pockets with the precious metals earned by this humble but useful kind of macadamizing. Chemists since the time of Bacon have become gradually less extravagant in their promises; neither Faraday nor Liebig, we fancy, have hinted at any thing directly to supersede the practice of medicine, or greatly to affect the

currency question, though the former has dropped hints about making diamonds from charcoal, and getting fuel from water after the exhaustion of the coal fields; and the latter gentleman has rather menaced Corporal Trim's theory of animal heat and radical moisture, as broached in the trenches of Nimeguen. The doctors and the experimental chemists are now on very good terms, and each new pharmacopœia is, in a friendly manner, by various recent discoveries, *aucta et emendata*.

Chemistry, no longer the rival of Medicine, is indeed her most valued ally, from whom she derives instruction and discipline in her training, materials for her warfare, and amusement for her leisure. Both are the faithful servants of mankind in their struggles with the material world—with disease and death.

But the public have of late been tempted to discard physic and her faithful ally. Overtures have been made by three foreign powers to perform all the garrison duty, as well as the severer field-service, more certainly, more effectually, and more cheaply. Hydropathy says, I have common sense, and the whole animal creation on my side. Mesmerism says, I will perform all your amputations without pain or inconvenience, and give you such secret intelligence of your enemies' movements, that, with your eyes shut, you shall see more than you now see with your eyes open. But Homœopathy promises most, and says, I will spare you that terrible effusion of blood, which, as even your present defenders admit, often makes their victories as bad as defeats—that sad drain upon your resources which has so often nearly starved you into a surrender, and left you no strength for a sortie—that enormous outlay upon ammunition, which, supposing it to be of good

and high quality, is as dangerous alike to friend and foe, but in which you are often so cheated by your contractors, that it is worse than useless. I make no shew or parade, insulting you with long files of obtrusive guards in all the colours of the rainbow: in fact, my troops are at once active for you and inoffensive to you—secret in attack, deadly in aim, efficient in service, and economical in maintenance.

The unsuspecting English public opens its mouth and rubs its eyes and ears at this tempting proposal, goes to see the new troops on parade, and enjoys exceedingly a few sham fights, and even a real skirmish or two, with some of those enemies which plague him most. *L'œux de joie* are fired for successes which the old soldiers would have thought mere matters of course, and which the new ones would never have gained, but that the said public, during the excitement of novelty, had left off its abominable habits of over-eating and drinking, and really done all in its power to help rather than impede its defenders.

The probability is, that while the public is doubting whether or not it should cashier the veterans and enlist this new brigade—this German Legion—in its service, some persons of rank and consideration are picked off by the enemy. Plenty of excuses will be found for this, no doubt,—the old *régime* was not without its heavy losses—"veniam petimusque damusque vicissim." The old guard was on duty still partly; the fault was quite as much theirs, and so on; but in the end the public comes to its senses, and no great mischief is done. The average loss is about the same, and the free knights pocket their pay and depart—to offer their services elsewhere.

One word to the veterans of our forces, and our companions in arms:—Let us not be wasting, in unprofitable

disputes with these gentlemen, time and temper and talents, which are needed for the warfare with the common enemy, disease. There are no doubt some honest, and many clever men amongst them. Their practice is at present confined almost exclusively to that class of persons who, long tormented by chronic ailments, are seeking relief wherever it is promised in the most alluring form. For such there must always be found a novelty. Patients of this class are, it is true, amongst the most lucrative; when relieved they are often generous and grateful, and extend the fame of their professional advisers. But, on the other hand, if not relieved, they are fickle, and sometimes, we fear, defamatory. The upright and scientific practitioner will, if he preserve his independence and his temper, his self-respect and his respect for others, see out two or three changes of these ephemeral wonders. The shrewdness of self-defence makes people calculate averages, and acute disease will rigorously extract the truth from homœopathy. The practitioners of this age will, of necessity, learn something from it; a diminution in the amount of physic swallowed will be a gain divided pretty equally between them and the public.

Any very great increase in the amount and variety of religious dissent, although depending in a great degree on political causes, and on other concurrent circumstances more or less obvious to the philosophical observer, has always been rightly judged to be connected with imperfections in the national establishment; and we may be sure that the unsettling of medical belief among the people of this country, and the lapse of several men of ability and of regular professional education into lamentable medical heresies, does indicate something wrong in established medical practice.

It is not enough to show, as in every case, no doubt, it might be shown, that these false teachers do in their education, their habits, their mental or moral conformation, give undoubted proof of some grievous obliquity which keeps their talents perversely turned in a wrong direction. It is not enough to show, that the timid libertine, the fretful dyspeptic, or the heart-broken friends of the hopeless consumptive, will persist, in opposition to the clearest evidence, in throwing away their money and their hopes on the large promises of the enthusiastic and the unscrupulous. The average of this class of sufferers does not greatly vary, and is not more than enough to supply the amateur-dispensers of infallible remedies, and the well-known advertisers who address them in the ordinary forms of the newspaper and the hand-bill. Something more than this is at work; more abundant materials are wrought upon; whole families are unsettled in their medical confidence. A few slight trials, or even a few conversations with an agreeable and clever Homœopath, during a season in town, suffice to instil a doubt, and a plausible volume perused in the country, to confirm it. The next case which the family medical attendant has to treat is jealously watched. Every symptom and every remedy is not only subjected to microscopic observation, but seen in a light polarized by new suspicions and a new theory. What wonder, then, that, as in optics, the minute examination of small things, so valuable to the philosophic and the experienced, should present to the uninformed eye only distortion and mistake: not quite *only* distortion and mistake, however, for, alas! enough of truth is seen to give credibility to a host of fallacies. Microscopists were long in settling the size and shape of the blood-globules, but if any one had propounded for the cure

or prevention of disease a theory which depended on their being star-shaped, and had shown a microscope at Charing Cross to prove it, he would have had abundant witnesses to the supposed truth every day in the year. Honest men, it is said, have looked at the lion over Northumberland House till they fancied its tail moved.

Let us work hard, then, to learn and to teach the greatest possible amount of truth with the smallest amount of error. Let us base our medical education on the broadest possible foundations of general science. Let us cultivate, diligently and perseveringly, those more exact sciences which assist our art—chemistry, anatomy, physiology, &c.

In the end, learning and knowledge will thus, without fail, triumph over the ephemeral systems of empiricism.

COLLEGE OF SURGEONS.

HUNTERIAN ORATION.

[THE Hunterian oration was delivered on the 14th, by Mr. Arnott, at the College of Surgeons. The theatre was much crowded; and as the oration contained many interesting details, we subjoin a very full report of it].

SIR AND GENTLEMEN,

The duty which has devolved upon me is not unmingled with pain. If it is instructive to dwell upon the merits of that great name which has to-day assembled us together, if it is agreeable to trace the steps of genius forcing its way from utter oblivion into the meridian blaze of fame, until it has become impossible to discuss the science of surgery without pronouncing the name of John Hunter, it is with regret that we must recount the losses which we have recently sustained, the gaps not easily filled up which death has made in our ranks.

At our last anniversary we had to deplore the loss of Sir Astley Cooper—a name for whom scarcely any panygeric can be too strong, since his fame, as a practical surgeon, was limited only by the boundaries of the civilized world.

This year we have to lament the decease of one whose merits were equally great, but in a different domain of knowledge—of Sir Charles Bell, whose transcendant reputation as a physiologist has, with the mass at least, almost eclipsed his eminent desert as a surgeon.

Sir Charles Bell, though not a pupil,

revered the memory of his great predecessor; for if the phrase “*damnant quod non intelligent*” aptly describes the judgment of the multitude, it is equally true that it requires high and perhaps kindred talent to estimate genius at its full worth.

Sir Charles Bell was born in 1775, and, after studying some years at the high school of Edinburgh, began the study of anatomy under his brother John. That brother, twelve years older than himself, was already in high repute both as a surgeon and as a lecturer. The instructions of such a teacher could scarcely have been heard without profit by an ordinary pupil: their effect upon Charles Bell was shewn by the publication, in his twenty-second year, of the first volume of his “*System of Dissections*”—a work marked by his characteristic originality.

At an early age he was appointed Surgeon to the Royal Infirmary; but the feuds which at that time distracted the profession in Edinburgh, as well as other causes, induced him to try his chance in the metropolis of the world, and Mr. Bell came to London in 1806. The rest of his career is well known to you; at any rate, it is unnecessary to dwell on the professorships which he held, or the other marks of public distinction which were heaped upon him. I will content myself with touching upon a few of the more prominent points of his genius and character.

As a surgeon Sir Charles Bell ranks high, “if not first, in the very first line.” His *Letters on the Diseases of the Urethra*, his *Surgical Observations*, and other works, show how deeply he had studied, and how diligently he had practised, the art which he professed. His dexterity and coolness as an operator were remarkable; yet he went to operations with the reluctance of one who has to face an unavoidable evil; in this respect resembling Hunter, and many other first-rate surgeons. Like Cheselden, who is said always to have turned pale when about to cut for the stone, Bell’s cheek was often seen to blanch on proceeding to operations performed with the utmost self-possession and skill.

As a proof of the zeal with which Mr. Bell cultivated surgery, I may instance his hurrying to Haslar after the battle of Corunna, and to Waterloo after that of the 18th of June, in order to study gunshot wounds.

Still more eminent was he as a teacher of anatomy. In the lecture-room he shone almost without a rival. His views were nearly always solid, and always ingenious; while his manner and language enchaind the attention of his audience. Dull, indeed, must have been the pupil who could have slumbered when Charles Bell was in the professorial chair. In his hands dry bones

lived again; imagination clothing them with the textures which had once invested them: a muscle was no longer a mere bundle of fibres, rising here and inserted there; it was a guide to the surgeon's knife in some important operation, or kindling with hidden fires, betrayed by the anatomy of its expression the emotions that lurked within: the flaccid artery on the table spouted forth its crimson stream, and demanded the arresting hand of the skilful surgeon, or threatened death as the alternative. In short, Sir C. Bell made his pupils think; and, interesting as anatomy is, even if considered as a mere branch of natural history, he taught them to value it most of all as a guide to the art of healing. The time, however, will arrive when all the contemporaries of Sir C. Bell, all in whose ears those impressive tones still linger, shall have been swept from the scene; yet his fame will still live; he will be remembered as the discoverer of the varied functions of the nervous system.

Let me be permitted to make an observation or two on the opinions of physiologists concerning this subject, before and since the publication of Sir Charles Bell's views.

It is well known that each spinal nerve arises by two roots; and it is now generally admitted that to the anterior one belongs the power of controlling motion; to the posterior one that of governing sensation. It had formerly been thought that each spinal nerve possessed in common the power of ruling both motion and sensation, and, in some cases, additional functions. This may be called the popular theory. Yet glimmerings of the truth had occasionally been forced, as it were, upon reflecting physiologists. For the ordinary theory was obviously insufficient to explain why sensation remains in a paralytic limb when the power of motion is lost; and why, on the other hand, motion survives feeling in cases of *anæsthesia*.

But although it had been conceived by some that the nerves of sensation were distinct from those of motion, no progress had been made in pointing out the principle in the anatomy on which one nerve could minister to sensation, another to motion; and the singularly original remarks of Hunter in his paper on the Nerves of the Organ of Smell, concerning two or more nerves coming from different sources to supply a single part, had fallen unproductive; they had not met with a congenial soil.

The multiplicity, intricacy of arrangement, and distribution of the nerves, at an early period engaged the eager attention of Sir C. Bell; and I have it from one, who, on several occasions, so far back as the year 1806, has seen him rise from the contemplation of the subject with the exclamation, "We must make something out of these

nerves." And already, in 1807, he had got a glimpse of the fundamental principles of his subsequent researches, as the extract I am about to read will show. They are from letters addressed to his brother George Joseph Bell, then at the Scotch bar, now professor of law at the University of Edinburgh (the talents of the family had not been engrossed by anatomy and surgery), and fortunately the letters were written before the revival of envelopes. The first from which I quote bears *in dorso* the post-mark, London, Dec. 5th, Edinburgh, Dec. 8th, 1807.

"My new anatomy of the brain occupies my head almost entirely. I hinted to you that I was *burning*, or on the eve of a grand discovery. I consider the organs of the outward senses as forming a distinct class of nerves from the others. I trace them to corresponding parts of the brain, totally distinct from the origin of the others. I take five tubercles within the brain as the internal senses. I trace the nerves of the nose, eye, ear, and tongue, to these. Here I see established connection—there the great mass of the brain receives processes from the central tubercles. Again, the great masses of the cerebrum send down processes or crura which give off all the common nerves of voluntary motion, &c. I establish thus a kind of circulation as it were. In this inquiry I describe many new connections—the whole opens up a new and simple light, and the whole accords with the phenomena, with the pathology, and is supported by interesting views. My object is not to publish this, but to lecture it, to lecture to my friends—to lecture it to Sir Joseph Banks' coterie of old women—to make the town ring with it, as it is really the only new thing that has appeared in anatomy since the days of Hunter, and, if I make it out, as interesting as the circulation, or the doctrine of absorption. But I must still have time; now is the end of a week, and I will be at it again."

In another (post-mark, Dec. 1807)—"I really think this new view of the anatomy of the brain will strike more than the discovery of the lymphatics being absorbents."

And in a third (post-mark, March 28th and 31st, 1808)—"I have been thinking of having a room five or six miles from town, and pursuing there my physiology of the brain—that *which is to make me, I am convinced*." This may be called the second-sight of genius!

At length, in an Essay entitled "Idea of a New Anatomy of the Brain," printed in 1811, Sir Charles Bell developed some of the principles destined to exercise so great an influence on the theory of the nervous system. Having called attention to the prevailing doctrines of the anatomical schools—that the mind, by the same nerves which

receive sensation, sends out the mandates of the will to the moving powers—he proceeds to announce his own opinion, that the parts of the cerebrum have different functions, and that the nerves which we trace in the body are not single nerves possessing various powers, but bundles of different nerves, whose filaments are united for the convenience of distribution, but which are as distinct in office as they are in origin from the brain. Pointing to the fact of the medulla spinalis having a central division, and a distinction into anterior and posterior fasciculi, he relates how he was thereby led to make experiments, of which he describes the results, upon the anterior and posterior columns of the spinal marrow, and upon the anterior and posterior roots of the spinal nerves, and how he thereupon came to the conclusion that every nerve possessing a double function obtains this by having a double root.

Adhering to the important principle thus laid down, Bell next directed his inquiries to the facial nerves, and, aided by his indefatigable pupil and coadjutor, Mr. John Shaw, instituted experiments to assist him in determining their functions, more especially that of the portio dura of the seventh pair, and those of the fifth. Happily he did so; for, without the fortunate circumstance that in certain parts of the body, especially on the face, the nerves of sensation and motion are distinct throughout their whole course, his great discovery could never have been clearly established.

It was about this time, when he was making the most important advances in obtaining positive and undeniable proofs of the truth of his doctrines, that we find him, under an impulse like that exhibited in 1807, addressing his brother in Edinburgh in a letter bearing the date of the 17th of August, 1819, to the following effect:—

“When you left us, I told you that I was to sit down to my notes of the nervous system. Believe me, this is quite an extraordinary business. I think the observations I have been able to make furnish the materials of a grand system which is to revolutionize all we know of this part of anatomy, more than the discovery of the circulation of the blood. I have a good deal still to do. How I am to bring it forward I do not know. I think by lectures in the first place, then by a little essay explaining the outline of a new system, and finally, by magnificent drawings and engravings of the whole nervous system. In the meantime I am making gigantic drawings of the nervous system for my class.”

The gigantic drawings for his class to which he alludes were large plans of the three great classes of nerves, under which he arranged those of the human body.

Two years afterwards, in 1821, a general account of the results of his observations was communicated to the Royal Society, in a paper read before that body, and apparently intended as an introduction to others which were to follow, and did follow.

Notwithstanding the novel and important matter it contained, the idea of a New Anatomy of the Brain had failed to attract attention. Not so the first paper in the Philosophical Transactions. Bell's views and opinions were now questioned, doubted, denied; then a certain amount of truth allowed to them; and, ultimately, the real and substantial credit of a patient, laborious, and original inquiry, was attempted to be wrested from him, and attributed to others, whose single merit, in this part at least of physiology, consisted in their adoption of that key which Bell had invented, fashioned, and shewn how to use—a key without which the secrets of the nervous system, so far as they are now known, had probably yet remained concealed.

In estimating Bell's claims as a physiologist, we are not called upon to regard his papers and memoirs on the nervous system as complete and perfect. Along with all that is distinct and precise, we may allow that there are some allegations not quite specific—allegations which a mind more severely disciplined might not have hazarded. We may grant that the functions of the posterior roots of the spinal nerves were therein suggested rather than positively stated. We may acknowledge, as he himself did acknowledge, that he misinterpreted an experiment in his first attempt at proving that which he afterwards did prove through Mr. John Shaw, that the fifth nerve is a nerve of motion as well as sensation. And we may agree in receiving with doubt, or at least without conviction, as not yet proved, his views with respect to certain nerves being super-added in the higher class of animals, for the purposes of respiration.

But, after all these acknowledgments, there remains to Bell clearly and unequivocally the merit of having first shewn—

That in investigating the functions of the nervous system, we must direct our attention to the roots and not to the trunks of the nerves.

That the nervous trunks conveying motion and sensation consist of two distinct sets of filaments in the same sheath.

That the filaments for motion form a distinct root from those for sensation, and that the anterior roots are for motion; leaving it to be inferred that the posterior are for sensation.

That the portio dura is a nerve of motion, and the fifth a nerve both of motion and sensation.

And lastly, of having been the first who,

dissatisfied with the observation and study of the mere form of the various parts of the nervous system, applied the method of experiment to aid him in determining their functions.

In a word, there belongs to Bell the great discovery, the greatest in the physiology of the nervous system for twenty centuries that distinct portions of that system are appropriated to the exercise of different functions.

Valuable practical precepts were immediately deduced from these discoveries, and at once applied by Sir Charles Bell and Mr. John Shaw. Perhaps the most important was the distinction of a local nervous affection from that which depends on disease of the brain. I will not detain you with cases of this kind, which, since the introduction of this new principle in the recognition and diagnosis of nervous diseases, have been accumulated in the records of medicine. The doctrine, however, and the consequences which ignorance of it occasioned, are well illustrated by a remarkable anecdote in a work where we do not usually look for physiological instruction. I mean Grimm's Correspondence; and as the story is little known, I will take the liberty of narrating it.

A physician in Paris, on visiting a case, found an Abbé playing at cards in the patient's chamber. Struck by the unfavourable aspect of the Abbé's face, he informed him that he had not a moment to lose, but must be carried home instantly. The Abbé, overpowered with terror, was taken to his lodgings, where, for several days, he was bled, cupped, and purged, till he was brought to the brink of the grave; yet his face still bore the appearance which had so much alarmed the physician. The brother of the patient at length arrived from a distant part of France, and asked what was the matter with his unfortunate relation. "Don't you see," said the bystanders, "his mouth is all on one side?" "Alas!" he replied, "my poor brother has had his mouth on one side these forty years."

Such cases will, in future, present no difficulty even to the beginner, and we recognise at once in Charles Bell the great characteristic of genius, that of giving the clearness of certainty to what before was either utterly unknown or but obscurely suspected.

Even supposing, however, that this were the sole practical lesson as yet deduced from Sir Charles Bell's discoveries, it would be unjust to measure their merit by this alone. Independently of the direct instruction to be derived from them, they have brought physiologists to the true path; and should the dim veil which nature has thrown over the operations of the nervous system be once drawn up, it will ever be remembered

that Charles Bell first constructed the machinery for raising it.

It is instructive to remark and to remember that Sir Charles Bell did not make very numerous experiments on living animals; but, guided by a careful study of the anatomy of the parts, and reflecting on the spontaneous experiments, so to speak, furnished by disease, he was led to form views, which, supported by a few well-planned experiments, discovered to him the truth, and enabled him to convert the guesses of former observers into admitted facts.

Had Sir Charles Bell not been a surgeon or a physiologist he might have been an artist, so admirable were his drawings, so exquisite his perception of the beautiful. This talent was with him a favourite, and might be cited as an instance of "the ruling passion strong in death;" for he was employed in sketching the gay scenery of Worcestershire but a few hours before his decease; and the leisure hours of the last few months of his life had been employed by him in preparing for the press a new edition of his work on the Anatomy of Expression. I ought rather to say re-writing it, so much additional manuscript does it present, so many additional illustrations from the study he had recently made of the great productions in painting and sculpture at Rome and Florence.

It was in the summer of 1840 that his love of art led him to Italy, that he might become more intimately acquainted with the master-pieces that enrich it. During this tour he kept a journal, which I have had the gratification of seeing: it consists of three volumes of sketches and remarks. He passed through Paris and Lyons, and entered Italy by way of Genoa. Here he was struck by the contrast between streets as narrow as "Blackford Wynd" and the gorgeous architecture which flank them. His hotel had once been a palace; and as he sat on a velvet cushion in an arm-chair of gold, while a fountain played from a marble lion, and the too vivid light was moderated by orange trees and silk curtains, he felt that he was in *Genoa la superba*.

He enjoyed what he calls a day of Raphael in the Vatican, and was worthy of enjoying it. His piercing eye detected, as we might expect, some errors in the anatomy of Raphael's drawings. "But do not think of that," he adds, "but of the fine comprehension of nature, the feeling and understanding of the human family. Man appears a superb creature in the Vatican."

On the last day which he spent in Rome he stood by the Palace of the Cæsars, from which he took his sketch of the Coliseum. "It is a place," he says, "to raise strange and solemn thoughts." A mountain has been

formed there by ruins, now covered with vineyards and cultivated fields. "Pillars and entablatures make the way uneven, and the acanthus is growing by the side of the broken capital, on which it is chiselled."

So much inventive genius and such indefatigable industry are rarely united in the same person; and when we add the warmth of his friendship, and, among his lesser qualities, the exquisite refinement of his taste, the combination is not often to be paralleled. He had some of the irritability that so often accompanies genius; yet, take him as he was, he has left a blank not easily filled up, either in the republic of science or the circle of his friends.

I need not apologize, I think, for the length at which I have discussed the merits of our illustrious fellow labourer; for the very conditions of my office require that I should celebrate the desert of those persons recently deceased whose labours shall have "contributed to the improvement or extension of chirurgical science."

In this class we must also rank one whose loss was recently felt, not only in the nation where it occurred, but by all Europe which he had instructed. I mean Larrey.

Larrey was born in 1766; became a pupil of his uncle, who practised surgery at Toulouse, and, after seven years' professional education, was appointed surgeon in the navy. He returned to Paris at the outbreak of the revolution, and, in 1793, was sent as regimental surgeon to the army of the Rhine. If we would have a specimen of the extraordinary energy and indignant resistance with which France then stayed the attack of the first coalition, we may look to Larrey, the most zealous individual of the important class to which he belonged. He invented the *ambulances volantes*, and was the first military surgeon who, having dressed the wounded, carried them off from under the very fire of the batteries. "It is to Larrey," says one of his panegyrists, "that we owe our place of honour on the field of battle." Such zeal could not fail to win applause; and Larrey obtained special mention in the report of General de Beauharnais after a battle fought before Mayence in July 1793.

At the siege of Toulon, in 1794, he gained the friendship of that Lieutenant of Artillery who was destined to shake the world! He accompanied the French army to Egypt, and served in all the subsequent campaigns of Napoleon throughout Europe. It is needless to detail the honours successively conferred upon Larrey until his social position became equal to his merits; but I may mention that, after the battle of Wagram, he was made Baron of the Empire, and that in 1812 he was made *Chirurgien en Chef* of the Grande Armée. He liked to be called by

the title of nobility which he had earned; nor was this a childish vanity; for he knew that neither the chance of birth nor the favour of a court had made him a Baron; but that the dignity had been bestowed by a discriminating hand which never conferred honours upon incompetency or inefficiency.

His arduous duties did not prevent him from recording a host of facts selected from the myriads presented to his observation. Among the works with which he enriched surgical literature some of the best are—

1. A Memoir on Amputation of the Extremities after Gun-shot Wounds.

2. A Historical and Surgical Account of the Expedition of the French Army to Egypt and Syria.

3. Memoirs of Military Surgery: an elaborate work in four volumes.

Among the valuable principles which he established was the necessity of immediate amputation after gun-shot wounds, pointing out, with nice discrimination, in what cases the operation was indicated. The propriety of immediate amputation had been advocated at intervals for two centuries; but the large experience and strong sagacity of Larrey first raised it into a canon of military surgery.

Previously to his time, it had been a maxim of practice, when the extremities were invaded by spreading mortification, never to amputate till nature had fixed a line of demarcation between the sound and gangrenous parts. He first shewed that the rule, though general, ought not to be universal; and he drew attention to the important distinction between gangrene dependent on a constitutional cause, and that which springs from the severity of a local injury. In the latter he advised immediate amputation, without waiting for the establishment of a boundary between the dead and living parts; and the instances which he gave of the successful application of this new distinction have been amply confirmed by the experience of others.

Fortunately for mankind, the clearest intellect is commonly accompanied by a benevolent heart, and the perspicacity of Larrey was equalled by his humanity.

Of all Napoleon's campaigns, that of 1813 was the most equally, the most severely, the most fiercely contested. It was then that Prussia, rising almost to a man, displayed a spirit at least equal to that of France in 1793; and in the combats which ensued the effects of science and art in war were heightened by the heroic, it may be rancorous, feelings of those engaged.

After the battles of Bautzen and Würcben, it was suggested to Napoleon that the number of the wounded had been increased by voluntary mutilation; and that all who had lost a finger, or whose hand had been pierced

by a ball, were traitors who wished to escape from the service.

Napoleon ordered that the wounded of this class, to the number of 1200, should be separated from the rest; and that a commission, consisting of several principal surgeons, should examine each of these soldiers. A council of war, moreover, was appointed to try the guilty, and cause them to be executed on the spot. Larrey had been named president of the surgical board. The day before it met, a certain personage, who believing the accusation, desired its success, ordered him to find four culprits in each division, who should be taken before a council of war, and shot instantly. Larrey, filled with terror and indignation at such an order, was about to send in his resignation, and quit the army, when a friend made him give up the project by observing that he might be useful to these unfortunate men.

Larrey did not hesitate one moment. The examination was extremely rigorous, and lasted four whole days. Larrey shewed, by reasoning on the character of the wounds, that all the accused were innocent. He then addressed a report to Napoleon; and, believing that he had displeased the Emperor in this affair, composedly awaited the disfavour which was to follow. But Napoleon was not insensible to the claims of truth and justice when clearly demonstrated and resolutely maintained. The conduct of Larrey was not lost upon him. In the middle of the ensuing night, Baron Fain brought Larrey a most flattering letter from the Emperor, in which he was congratulated on his firm, honourable, and humane conduct. This letter was accompanied by a present of 6000 francs, and the warrant of a pension of 3000 to be paid from Napoleon's privy purse.

In his long exile Napoleon did not forget his great surgeon: besides bequeathing him 100,000 francs, his will records the honourable fact, that Larrey was the most virtuous man he had ever known.

His own escutcheon might have been saved from its darkest blot, had he always encountered the moral fearlessness of Larrey and of De-genettes.

But I must now approach the great object which has to-day brought us together, and endeavour briefly to describe the peculiar and more prominent points of Hunter's career.

John Hunter was born in 1728, and began the study of his profession at the age of 20. He died in 1793, leaving a reputation as a surgeon and a naturalist beyond that of any other man in the annals of fame. Some few may have been his equal, nay, his superiors (though that is a bold word), in either departments singly; for excellence in both combined he stands without a rival.

He was snatched away too soon from the profession which he adorned; and if we number his years alone, his death may appear premature; but if we adopt the theory of the Roman philosophical poet, and measure time by what has been performed in it, we might suppose that Hunter had lived an age. Half a century has now elapsed since his death, and few of his contemporaries are with us; the voices of envy and of partiality are alike silent in the tomb, and we are called on to estimate what Hunter attempted, intended, accomplished.

The materials for our judgment are to be found in his books, both printed and manuscript, as well as his numerous drawings. But it is most of all in his museum that we appreciate the prodigious extent of his views, bounded only, if that can be called a boundary, by the limits of animated nature.

John Hunter early shewed the characteristic features of his mind, the interest he took in physiological inquiries, his capabilities of minute anatomical investigation, and his powers as an original thinker. Within ten years of his arrival in London, he had solved the problem as to the cause and mode of the descent of the testis in the fœtus, had closely examined the connection between the uterus and placenta, had made that preparation, the oldest in the museum, where, tracing the branches of the fifth pair of nerves in the nose, he was led to the conclusion that the organs of sense receive their endowments of ordinary sensation from that nerve, and to the more general proposition, "that if we consider how various are the origins of the nerves, and how different the circumstances attending them, we must suppose a variety of uses to arise out of every peculiarity of structure;" thereby approaching more closely than any one else had done to the principle subsequently established by Sir C. Bell: and, moreover, he had instituted a very ingenious set of experiments with the view of determining whether the veins possess the power of absorption.

When, soon after, he accompanied the army to the coast of France and the Peninsula, his duties as Staff-Surgeon did not prevent him pursuing those physiological inquiries in which he took so much delight. He was then engaged in determining, by experiment, whether digestion continues in lizards and snakes during their torpid state; and he made other experiments on the faculty of hearing in fishes, the organ of which sense he had discovered in these animals before leaving London. At this period, too, were made those observations on gun-shot wounds, with which seems to have originated that inquiry which, in its published form only, appeared 30 years afterwards. And in an incidental remark in his paper on the vesiculæ seminales, "that he took the oppor-

tunity of opening a man immediately after he had been killed by a cannon-ball, to be more certain of the nature of their contents," we perceive how strong was his physiological zeal, and how eagerly he seized every opportunity of adding to his knowledge.

There is reason to suppose that when he returned to London in 1763, the scheme of his future life and occupations had been already formed. The College possesses a manuscript catalogue in his own hand-writing, apparently written a few months after his return from Portugal, briefly defining the nature of about 200 specimens of natural and morbid structure, grouped together according to organs—the germ of that museum in which he sought to display all the types and modifications of animal structure.

The great object of Mr. Hunter in the formation of his museum was the illustration of life, in its natural and diseased condition, in plants as well as in animals. Physiology, in its largest sense, was the aim and scope of his labours; whether we view him investigating the properties of the seed or of the egg, where life lies sleeping; displaying every form and variety of organization; tracing its developments; observing its aberrations; deducing the laws of life; or applying his knowledge of these laws to the explanation of the phenomena of disease, to the prolongation of the existence, or to the relief of the sufferings, of his fellow-creatures.

Of the vast basis on which Mr. Hunter raised his superstructure, and of the soundness of the materials of which it is composed, his museum is the best evidence. At the period of his death, and he was adding to it with unabated zeal up to the last day of his existence, the number of preparations of natural structure alone amounted to nearly 4000.

It is impossible to form a just conception of the beauty and value of these preparations without a detailed examination of the museum itself, and of the excellent catalogues which have now been drawn up. But you may form some idea of the industry and vast labour expended in its formation, when I state to you, on the authority of one who has had the best means of knowing, Mr. Owen, that there is proof of Hunter having dissected above 500 species of animals, exclusive of repeated dissections of different individuals of the same species, besides those of plants to a considerable amount. And of his diligence in recording the details of his observations, that at the same period he possessed original records of the dissections of 315 different species of animals.

Not contented with displaying the peculiarities of their structure, and recording them, Hunter caused most elaborate and accurate drawings to be made from recent

dissections of many animals, and for this purpose retained in his family many years an accomplished draughtsman.

But Hunter's object was not only to dissect, observe, detail, and exhibit a mass of detailed facts in anatomy; he had far higher aims than that of a mere collector of facts, even in comparative anatomy; and his feelings on this point were sufficiently expressed when, in reply to an invitation on the part of Sir John Pringle to collect all his dissections of the turtle, and send them to the Royal Society, he stated "that the publication of the description of a single animal, more especially of a common one, had never been his wish."

Mr. Hunter was not only in possession of numerous and precise facts in anatomy: he approximated them—he compared them together, and, by his superior genius, arranged them in the true order to be followed in comparative anatomy—that of organs; for, as has been well observed, if species is the object of comparison in zoology, organ is evidently that in anatomy. Of the successful manner in which Hunter disentangled and unfolded these organs, tracing them from one species of animal to another, and exhibiting their modifications, his museum is the faithful record; and his labours in this respect must assuredly be regarded as the first great attempt to arrange in systematic order the detached facts of comparative anatomy. When I represent his arrangement as that according to organs, perhaps I ought to add, or of function, for although the former was the visible manifestation, the latter was the presiding idea. And the 4to. manuscript catalogue, the most valuable Hunterian document remaining to the College, derives its chief importance from the information it supplies respecting the scheme of arrangement, and the general physiological principles intended to be illustrated by the different series of preparations. It was this circumstance which distinguished Hunter from the other most successful cultivator of comparative anatomy of modern times. He studied this important subject with a view to physiology—Cuvier with a view (chiefly) to zoological classification.

Unfortunately for the earlier recognition of Hunter's high claims in anatomy and physiology, these could not be fairly or fully estimated until his manuscripts were published, within the last few years, by the College, in the physiological catalogue explanatory of his collection. And what must not science, as well as his reputation, have lost in those ten folio volumes of manuscript so shamefully committed to the flames.

But Mr. Hunter's Memoirs and Essays on various parts of the Animal Economy distinctly shew the vast range of physiological subjects which his mind grasped. And

those who seek to know what his powers of observation, reflection, and investigation, were capable of, would do well to read his papers on digestion, animal heat, respiration, and generation, and consult the corresponding parts of the physiological catalogue.

As the vital organs and their functions had occupied a large share of his physiological inquiries, it is not surprising that the views which he thereby acquired were made available by him in his investigation and explanation of disease, and in his treatment of it. The powers of the absorbent system, the structures and properties of blood-vessels, the properties of the blood, the reciprocal influence of the different organs on each other, and a number of other physiological truths, all occupied their place in his pathology and practice. If he may have rated the powers of the lymphatics too highly, and sometimes given them too prominent a place in his views of morbid action, he did not over-estimate the power of absorption—an estimate which, with his true appreciation of the cause of failure in the old operation for aneurism, led to one of the most brilliant improvements in the treatment of disease to be found in the whole history of surgery.

It is scarcely possible to praise this improvement too highly, so great in itself, so fertile in its results, for it has conferred life upon hundreds. It was not only that a safer and more successful operation was introduced, but this very safety and success led to its application to numerous cases of the disease, which, under the old method, durst not be meddled with, the patients being left to their fate.

Knowing that Mr. B. Phillips had been for some time collecting from English and foreign works the number of various surgical operations recorded, and their relative success, I applied to him to furnish me with the number he had been enabled to collect upon the subject of aneurism treated according to Hunter's method, and he has been so obliging as to furnish me with the following return. 389 cases of aneurism had been so treated, and the result 277 cures.

	Cases.	Cures.
Subclavian . . .	80	46
External iliac . .	79	62
Carotid	74	59
Femoral	113	77
Humoral	30	24
Various	13	9
	<hr/> 389	<hr/> 277

And when you consider that the operation, as an established one, has, of late years especially, been often performed without any record of it being published, you will perceive that I have not gone beyond the truth in asserting that it has conferred life upon hundreds.

Among his pathological essays, the one on inflammation of the veins may be mentioned with especial praise. He was the first who understood and explained the nature of the malady, and opened the road to the additional discoveries made since his time. In his paper on Intussusception, he ingeniously shews how the different varieties of the disease are produced; and in his Essay on the Formation of Loose Cartilages in Joints, he satisfactorily explains their presence by a reference to pathological preparations. But the loftiest efforts of John Hunter are to be found in his work on the Blood, Inflammation, and Gun-Shot Wounds. The mode of investigation in this masterpiece—the application of physiology to practice—suffices to distinguish him from all preceding writers, and may be considered as the basis of modern pathology. Its influence is felt not merely in surgery, but in medicine, for its principles are catholic. Up to the time of Hunter, surgeons were content to take their general view of the nature of disease from physicians. He emancipated them from their trammels, and established a body of doctrine so sound that it has wholly superseded the airy theories of medicine previously current. Nay, it seems to have stifled similar phantasmata in their birth, for since the days of Cullen and Brown no new *system* of physic has obtained the slightest vogue in England.

Hunter's consummate skill in the experimental investigation of physiological questions has been often and most deservedly extolled. That famous experiment with the egg—the most brilliant thing done with an egg since the days of Columbus—has set the question of vital heat at rest for ever.

"I put an egg," he says, "into a freezing mixture about zero, and froze it, and then allowed it to thaw. Through this process I conceived that the preserving power of the egg must be lost, which proved the case. I then put the egg into a freezing mixture at 15°, and with it a new-laid one, to make the comparison on that which I should call alive, and the difference in the time of freezing was 7½ minutes, the second one taking so much longer to freeze."

This experiment, and those which follow, may serve to shew John Hunter's mode of advancing in knowledge. By a scrupulous observation of facts, he gradually ascended from the particular to the general, instead of assuming a principle *à priori*, and bending facts to square with theory. I cannot, in short, praise his method more highly or more justly than by saying it was the one pursued by all who have obtained a lasting reputation, in ancient or recent times, as natural historians. It was this which enabled Aristotle to carry off laurels in the field of zoology, as immortal as those which he carried in metaphysics and dialectics. He was one of the greatest observers that ever

existed, says Cuvier, and had the most extraordinary genius for classification that nature has hitherto produced. Some of his aphorisms, adds the same great authority, from their generality presuppose an immense number of observations.

It was upon this that Galen's great reputation was primarily founded. He was one of the most successful prosecutors of anatomy of his time, although obliged by its prejudices to content himself with the examination of animals, and consequently falling into error when the structure of man differs from theirs. He made many discoveries in anatomy and physiology. He was the first to prove by experiment that the arteries did not during life contain air, but blood; and the first to shew by their section the influence of the recurrent nerves on the voice, which nerves he discovered and traced to the larynx.

It was the method, which, revived by the great triumvirate of Italian anatomists of the 16th century, Vesalius, Eustachius, and Fallopius, was followed by Fabricius and our countryman Harvey, and which was established by Bacon, as the *true logic of science*. Their undying reputation proves its success, and when we impartially weigh what Hunter accomplished, we need not fear to compare him with the shining lights that had gone before.

In order, however, to form a just estimate of his comparative merits, we must look at the circumstances in which his rivals in the fasti of science were severally placed.

Thus, the position of Aristotle was most favourable, and both he and Galen received the best education which opulence and the severe discipline of Ancient Greece combined, could confer in philosophy and literature. In modern times Fabricius and Harvey, with the triumvirate I have mentioned, were equally fortunate, and if we pass from these eminent forerunners of Hunter, to Cuvier, his distinguished successor, we shall find that he also had walked from his childhood in the paths of learning and science. His early education was the chief employment of his mother, a woman of superior understanding united with the greatest tenderness. Without knowing the language, she made him repeat his Latin lessons to her; thus practising, unconsciously perhaps, a precept of Locke. He drew under her eye, and she made him read numerous historical and literary works. "It was thus," says M. Flourens, "that she developed and fostered that passion for reading, and that extended curiosity, which, as Cuvier says in his memoirs, were the main-springs of his life."

At the academy of Stuttgart, Cuvier received an excellent education, and when driven to battle with the necessities of life at eighteen, and seek a subsistence in a

foreign land, he was rich not only in knowledge, but in the confidence acquired by the constant successes of his scholastic life.

The career of John Hunter differs from the others I have enumerated in one very important point. His father died early, and it was his misfortune to have a carelessly indulgent mother, so that he passed his boyhood in sauntering, in country sports, and in cabinet-making. It was not till the age of twenty, that hearing of his brother's success, he gave up the *dolce far niente* for the rest of his life; came to London—entered William Hunter's dissecting room, and worked as few have worked before or since. Poverty and contempt had been imminent, but he burst with giant strength the bonds of habit which confined him, and escaped from the threatening spectres for ever.

This triumph achieved, the rest was comparatively easy. After this, we must no longer consider his career as an instance of "the pursuit of knowledge under difficulties." On the contrary he had many special advantages. "He began," says Sir C. Bell, "to work for himself on the excellent basis of his brother's labours." William was a man of good education, an accomplished anatomist, and rising into practice as an accoucheur. He had begun to form his museum, and his house gradually became the resort of those who wished to advance the art which they practised. Nor must we omit the important fact, that this brother, whose public and private tuition was destined to develop the genius of John Hunter, was ten years older than himself; a difference which would enable him to add something of paternal authority to brotherly persuasion. The same advantage was enjoyed by Charles Bell, and we have already seen with what fruits.

Yet, great as these advantages were, backed, too, by splendid genius and unwearied industry, did they entirely compensate for the want of early education? Some answer "Yes;" nay, it is even a question with them whether a better and more learned training might not have stunted that eager curiosity, that faculty for observation, that power of generalizing, which he possessed in so eminent a degree. This cannot be determined now; for, instead of knowing the whole history of his feelings and attainments, some fragments alone have reached us: but it is very certain that a learned education had not this freezing power with those distinguished men to whose career I alluded just now. And then, reflect on the advantages which good training gave them. Take Cuvier, for example. Whence did he derive the clearness of his descriptions, and the facility of his style both in written compositions and in oral communications? Whence, but from the literary toils of his boyhood at Stuttgart? who, that sat on the benches of

the amphitheatre at the Jardin des Plantes, will ever forget the impressions which he produced?

This clearness of expression cannot be predicated of John Hunter. When he gets beyond mere description, his language becomes obscure, and it is evident that composition was not easy to him. As a consequence of this, many of his MSS., among others the catalogue of his museum, were never completed. When we view him as a teacher, however, censure is swallowed up in admiration.

Nevertheless, it is said that he was deficient as a lecturer; and he certainly seems to have wanted that vivid diction by which some men are enabled to enchain the attention of their audience, and lend the charm of novelty to the most familiar details. Sometimes, too, he appears to have been unable to express what he meant; and it has been boldly assumed, that, on such occasions, he had no meaning at all, and was "labouring with the delivery of nothing." Let us deem more nobly of John Hunter. Who can doubt that, in such instances, his mind was often wrapt in the dim vision of heights which he was not fated to ascend? What labourer, in science or in art, has not felt the force of the *nequeo monstrare et sentio tantum*? Without fluency and vivacity, however, a lecturer can rarely be popular; and hence John Hunter's lectures were but thinly attended. Like Milton, he probably was content if he could "a fit audience find, though few;" and he might, indeed, have been satisfied could he have anticipated the future glories of his pupils. Let us estimate his lectures, not by a cold analysis, but by their effects. When Demosthenes had thundered forth a Philippic, the Athenians did not say, "What a fine oration!" but, "let us march against Philip."

The notes of John Hunter's lectures which have come down to us do not contain many specimens of his peculiar manner. The account of the treatment of cancer, however, is an example of his strong unsparing good sense conveyed with extreme familiarity of style.

"No cure has yet been found; for what I call a cure is an alteration of the disposition and the effects of that disposition, and not the destruction of the cancerous parts, which extirpation, however, will often cure as well as we could do by changing the disposition and action. Arsenic seems to have some power of this kind; and its effects might be increased by being used internally and externally; but its use is very dangerous, and, I am afraid, insufficient for the disease. This is a remedy which enters into the empirical nostrums which are in vogue for curing cancer; and among which Plunkett's holds the highest rank. But this is no new

discovery; for Sennertus, who lived the Lord knows how long ago, mentions a Rodriguez and Flusius who obtained considerable fame and fortune by such a composition. I was desired to meet Mr. Plunkett to decide on the propriety of using his medicine in a particular case. I have no objection to meet any body. It was the young one. The old one is dead, and might have died himself of a cancer for aught I know. I asked him what he intended to do with his medicine. He said, 'to cure the patient.' 'Let me know what you mean by that. Do you mean to alter the diseased state of the parts? or do you mean by your medicine to remove the parts diseased?' 'I mean to destroy them,' he replied. 'Well, then, that is nothing more than I or any other surgeon can do with less pain to the patient.' Poor Woollett the engraver died under one of these cancer-curers. He was under my care when this person took him in hand. He had been a lifeguardsman, I think, and had got a never-failing receipt. I continued to call on Woollett as a friend, and received great accounts of the good effects: upon which I said, if the man would give me leave to watch the appearance of the cancer, and see myself the good effects, and should be satisfied of its curing only that cancer (mind, not by destroying it), I would exert all my power to make him the richest man in the kingdom: but he would have nothing to do with me, and tortured poor Woollett for some time, till at last I heard the sound testicle was gone, and at length he died."

I have stated that Mr. Hunter's lectures were but thinly attended, but that he might have been satisfied could he have anticipated the fame of his pupils. Among those who lived in his house, there were several who attained great eminence in their profession. But there were other pupils of his who had not these additional advantages, and yet drank deeper—far deeper—of the spring open to all. Among them may be ranked Poli, Scarpa, Blumenbach; and others who, fortunately for the progress of surgery, developed some of his favourite ideas with more fulness and precision than their master himself, and strove to instil into their scholars the doctrine and practice of their great instructor.

One of the most distinguished of these was Abernethy. In his Essay on the Constitutional Origin of Local Diseases, he has most ably made out his point; and, both in the treatise and in his lectures he surpassed John Hunter in the clearness with which he laid down the principle, and the practical tact with which he followed this law into its consequences.

Sir Astley Cooper, a still more illustrious man, was numbered among his pupils, and excelled him as a practical surgeon as much

as he felt short of him in the qualities of a philosophic teacher. Every work of his was based on the most patient anatomical examination, and thus became a faithful commentary on nature herself. His treatises on *Hernia*, on *Fractures and Dislocations*, and on *Diseases of the Breast*, might found a reputation singly: what have they done united?

John Thomson, too, still left to us, was another pupil of Hunter's, who, in his celebrated work on *Inflammation*, followed out in a kindred spirit the views of his great master.

It is probably not going too far to say that to the veneration in which these three distinguished men held the opinions and example of John Hunter, and their constant reference to him in their lectures, that the propagation of his doctrines, and their influence on English surgery, has been mainly owing.

I will not detain you by observations on the personal peculiarities and failings of John Hunter; but there is one anecdote, which exhibits so strongly his practical tact, as well as his Johnsonian style of coming to the point, that I cannot refrain from quoting it.

He happened one day to call on Mr. Nicoll when his wife was pregnant for the sixth time, and took the opportunity of asking him whether he intended to kill this as he had killed all the rest of his children. Mr. Nicoll, it seems, had adopted what is called the hardening system with all the previous ones. Not understanding the question, however, he asked John Hunter what he meant. "Why," said John Hunter, "do you know what is the temperature of a hen with her callow brood (chickens), because, if you don't, I'll tell you." He then proceeded to explain the necessity of warmth to young animals, and convinced Mr. Nicoll of the propriety of changing his plan, which he did, and with complete success.

It was finely said by Dr. Beddoes, that "when one heard that Hunter was at length the first surgeon in London, one felt a satisfaction like that which attends the distribution of poetical justice at the close of a well-told tale."

With this sentiment the intellect and the heart must alike agree; the honest and the clear-headed must equally exult in the ultimate success of John Hunter. Yet I will observe in conclusion, that, had his career been cut short at an earlier period, he would not have laboured in vain, far less would he have lived unhappy. Unlike him who toils for gain alone, and whose praise is measured by the wretched gold which he has accumulated—unlike the warrior or the statesman, who must appeal to success for justification, and whose failures are

reckoned as crimes by exasperated nations—the man of science labours in a genial field, where exertion is its own reward; for while the worshippers of power and wealth are sickened by each trifling disappointment, the humblest acolyte in the temple of knowledge feels that it is good to be there, and that even failures are but lessons. The pursuits of the scientific inquirer, when carried on in a right spirit, stand second among all the subjects which can occupy the human mind. Though faction and avarice unceasingly murmur in the vicinity, his mind remains unruffled by their clamour. Like the fleece of the Hebrew leader, while all around is parched, he alone is fostered by the gentle dews of heaven.

ST. THOMAS'S HOSPITAL.

ON Tuesday, the 14th instant, the examination of the body of the late Mr. Richard Carlile was celebrated by an eloquent oration from Mr. Grainger, pronounced before a crowded audience, in the anatomical theatre of St. Thomas's Hospital. Mr. Carlile, in conformity with the religious and philosophical views which he is long known to have entertained, many years before his decease signified his wishes by express dedication that his body after death should be appropriated to the purposes of dissection. These wishes are now being practically executed. The great event of death has arrived, and with it the period for the realization of his desire. Notwithstanding the mournfulness of the circumstances and occasion, it is a time when science has reason to exult in witnessing thus a sacrifice nobly offered for its good, and an exemplary overthrow of the spell-like bonds of those popular scruples and prejudices which continue to this day to fetter the progress of anatomical science. Whatever the views or reasoning which actuated the late Mr. Carlile in the manly constancy with which he adhered to this resolve, his dead body, which is now the inmate of the dissecting-room, must be viewed as the strongest of all proofs that his convictions were sincere, his belief deliberately formed.

But as in our next number we have to present a detailed report of Mr. Grainger's oration, with the results of the inspection of the body, we shall reserve all further notice until that time.

NOTICES.

We cannot insert the letter of "Scrutator," unless he attaches his name to it. We do not think it right to continue a controversy in which one party gives his real signature and the other writes anonymously.

The Hunterian oration having proved longer than we anticipated, several papers are unavoidably postponed till our next.

WILSON & OGDEN, 57, Skinner Street, London.

THE
LONDON MEDICAL GAZETTE,
BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, FEBRUARY 24, 1843.

CLINICAL LECTURES,

Delivered at St. Thomas's Hospital,

By FREDERICK TYRRELL, Esq.

Lecturer on Clinical Surgery at St. Thomas's
Hospital School, and Senior Surgeon to the
Hospital.

*On the Principles of Diagnosis and
Therapeutics.*

GENTLEMEN,—In all the established sciences it is the universal admission of philosophers, that it is as important to the spread of their usefulness as to the facilitating of discoveries and improvements, that every and each department in the cycle should be distinguished by the possession of a language—a systematic vocabulary—by means of which facts are to be recorded and phenomena described. The value of such a language, however, must obviously be determined by the degree to which philosophers consent to its universal employment. In every trade and profession, as much as in every division of science, there are slang or vulgar phraseologies, a vernacular tongue, which makes up a system of speech proper to each.

No desire being manifested for the introduction of novel or eccentric terms, the language thus is transmitted from one generation to the succeeding, uncorrupted even by those minor lexical improvements or changes, which, in regard to the accredited of the sciences, in successive periods bring with them such deep-rooted innovations, as much in the verbal character as in the principles of the adopted nomenclature, that the works of standard authors, produced and written at long and distant intervals of time, become scarcely intelligible to the same reader. With reference immediately to our own profession, it is remarked as a prominent feature in the history of many of its integral departments, that in proportion as generalizations are made, and laws of general application established, im-

portant measures are being adopted which are calculated more and more to unite the scattered fragments of their peculiar language under some common bond of grammatical principles—principles known to and recognized by all, and therefore capable of ready interpretation. Chemistry is emphatically an example of a science, whose rapid development in modern times, and even recent years, has been in great part due to the scientific simplicity of the principles on which alterations, additions, and improvements, have been suggested and regulated.

Botany is likewise distinguished by the possession of a concise and significant language, which renders easy the pathway of the student who first acquaints himself with the grammatical elements which are admitted to have directed and governed its original construction. The facts and laws of these sciences are immutable, and provided the same conditions operate, susceptible of no variations of character. In relation, however, to special departments of medicine and surgery, no determinate and exact synthetic rules have been hitherto proposed for adoption, adequate in the least to the construction of a complete system of terms by which to characterise, definitely and uniformly, the varied objects of sense and reflection which the author is required to describe, and the practitioner to recognise. This constitutes frequently the source of greatest impediment to the progress of the student, whose classical information does not enable him readily to search into and analyse the etymology of the prevalent terms. For the most part the notions of nomenclature entertained by the earlier authors and observers in medicine and surgery were so vague and unsettled, that the *name* of a disease would receive for its arbitrary root some trifling incident quite as probably, as some more rational circumstance or fact. The terms hydrophobia, diabetes, scirrhus, carcinoma, chorea-sancti-viti, apoplexia, anasarca, hemiplegia, are proofs enough of the random and empirical

etymology which has been allowed to determine the manufacture of names, which, if *compounded* on some established and systematic rules, might be made the vehicles through which to convey, even at first view, much useful information to the student respecting the seat or character of the disease of which they are designed to stand as the designations. It must be at once apparent from the few examples presented in this enumeration, that no principle of synthesis capable of general use and application could have been thought of by those writers with whom these heterogeneous elements of our vocabulary had their remote origin. The term hydrophobia reduced to its component factors (*ὕδωρ*, aqua; *φόβος*, timor, fear), will be seen to have originated from a peculiarity in the character of this disease which is neither uniform and constant in its presence, nor at all significant either of the nature or seat of the malady. The *φόβος* extends to *all liquids*—it is the act of *deglutition*—the action of the muscles which is the source of that irrepressible dread, which even in remote contemplation overwhelms the sufferer. Diabetes, *δια, per—βαίω, incedo*. In the composition of this word there is nothing whatever capable of affording a clue either as to the organ which the disease affects, or the essential character of the morbid condition for which the term has been assigned as the *name*. Fever, from *ferveo*, to burn; chorea sancti viti is another euphonious appellation, quite canonical you will say, because apostolic, at all events saint-like in its extraction. *Hæc videtur genuina linguæ nostræ ratio antiqua!* By these few illustrations, sufficient may have been done to show to you, gentlemen, that hitherto, in medicine and surgery, no attempt has been prudently and intelligently made towards the introduction and establishment of a philosophical system, for the construction and derivation of terms. Erroneous conceptions of *things* are generated by unmeaning and inappropriate epithets. This absence of rules and principles in the formation and application of terms appears to me to have gone far to retard the progress of medicine and surgery, and to have almost dispossessed them of those legitimate claims which *unchangeable* facts and substantively founded principles in every grade and section of science, invariably offer. Hydrophobia, tetanus, meningitis, pleuritis, and all other *definite* morbid changes, are *constant* alike in essence and manifestations. If, therefore, it be practicable to collect into a massive assemblage a great variety of such facts and cases, and the circumstance be considered that under the *same* external signs or symptoms, the *same pathological* condition, or in other language, the *same* disease exists, it seems unphilosophical to refuse, in relation

to medicine and surgery, the appellation of “science,” or to range them under this exalted head. An adequate acquaintance with the dead languages is not the only requisite to the correct and appropriate compounding of a new term. The more important desideratum unquestionably respects the precise knowledge of *facts* and *particulars*. If the ultimate and exact nature of a disease be satisfactorily ascertained, it cannot be denied that the least mutable or most constant and striking of its conditions should constitute an obvious element in the new name. Andral, misled by hypothesis, and conceiving certain coincidences as constant, which were subsequently proved to be inessential to the existence of the diseased state, made them the foundation of a chain of novel epithets, and invented a series of classical terms which were designed to convey ideas of morbid conditions afterwards proved to be by no means necessary, and dependent phenomena of the disease with which they happened sometimes to be associated. False views were thus raised, which led to the perpetuation of errors more injurious in their consequence than the more arbitrary, and less classical, designations antecedently in use. There are, notwithstanding, certain minor divisions of practical medicine and surgery whose nomenclatures are founded upon principles as philosophical and exact as students of the most scholastic tastes can possibly desire.

Within the pale of ophthalmic surgery this observation is fully verified: for the most part, the diseases of the eye are distinguished by names, the *etymon* or roots of which at once proclaim the structures involved, whilst the terminal element pronounces with equal precision the nature of the diseased action—as corneitis, iritis, aquo-capsulitis, and so on. The termination *itis* is likewise now generally employed to distinguish inflammation of structures in other parts of the body. Peritonitis, endocarditis, muco-enteritis, are examples of those specific terms denoting the existence of inflammation in particular situations. It is highly desirable that the time should arrive when concise and rational and definite terms may be securely invented for the distinguishing of the numerous diseases which comprise the varied category of human *frailties*. Under the existing medical nomenclature it were a task of no inconsiderable difficulty to develop the principles on which diseases have received their names; an idea has already been conveyed of the multifold character of these circumstances. A striking symptom forms the Latin or Greek root of one term: in other instances, it is the seat or structure involved that forms the most prominent feature in the distinctive epithet; in others, it is the *nature* of the dis-

ease that is most obviously signified ; and in others, some attendant *condition* is more particularly denoted. The terms general, active, local, hyperamia and anemia of Andral, are exemplifications of the latter. From the remarkable confusion which prevails throughout the detail of medical language, the department of classification or *nosology* cannot soon attain any very elevated and certain character. It is quite certain that our knowledge of the *conditions* of disease, of the *functions* of organs, has not advanced to a sufficiently enlightened standard to render secure the adoption of any innovating measures affecting radically the systems of nosological arrangement and nomenclature, which are at present in use. The classification of Cullen is erroneous in every particular. His arrangements and tabulations are without exception founded upon theoretical notions, of which advancing science requires the complete explosion. Whatever the nosological system ultimately adopted, the propriety of assenting to the principle can scarcely be doubted, that things essentially *dissimilar*, not in regard to structure, but *action*, or the nature of the disease, should be held distinct and presented as separate objects, while things really *similar* should be as much as possible marshalled under the same division, and characterised by the same system of terms.

Gentlemen, at the commencement of this lecture it formed no part of my intention to deliver before you a dissertation on the grammatical structure of medical language, or decipher in readiness for you the subtleties of our technical vocabulary ; neither can I confess it as any part of my wish to divert your aspiring minds from *things* to *words*. *Res non verba* implies a counsel which should never be forgotten. The reputation of a simple lexicographer in science, I trust, is remote from you all as an object of ambition. While I unqualifiedly admire the love of scholarship in the medical student, while I would foster with a liberal hand the cherished desire for acquaintance with classical and general literature, as favourably calculated, if temperately gratified and directed, to exalt the character and further the ends of our profession, it is an inculcation which I urge as my best advice to you all, that as you are destined to stand before the public eye as the licensed ministers of science, professing an acquaintance with the means which science has discovered and accumulated for the relief of human suffering, let not the fraud be committed of violating the public faith, in presenting yourselves as polite scholars, or adepts in the arts of the world, rather than as sound, trustworthy, practical men—as *bonâ fide* candidates for practice, honourably expectant of all the liabilities and anxieties which

a professional career, usefully passed, will most surely entail. But let not this remark be construed into the unwise recommendation that every portion of your precious time should be devoted with unremitting and monotonous labour to the practical details of professional study, or that you should take up a constant and vigilant abode amid the mangled remnants of a former humanity scattered over the tables of your dissecting-room. I admit, from the distant recollections still engraven on my own mind, that there is an air of science in the associations and atmosphere of that room well calculated to exalt the mind of the ambitious student into an ennobling contemplation, and refined conceptions, on the wondrous mechanism, the recondite phenomena, of that machine whose derangement it is the greatest object of his life to study and understand. Cultivate, therefore, habits of thought and activity, and you will find time for every thing—for punctuality in all the relations of life, for the purest pleasures of society, for the enjoyment and cultivation of literature, and for the gratification of every rational amusement. Study and imitate the intentness and perseverance with which Cicero conducted his own education—"At verò ego hoc tempore omni noctes et dies in omnium doctrinarum meditatione versabar." The biography of all eminent men in all countries and of every nation, teaches the important lesson, that if real distinction and excellence is to be attained in any profession, the most watchful rigour should be practised in the economy of time. But let us proceed to the discussion of those practical subjects upon which it is more particularly my province and object to lecture.

You may now have perceived that, in collecting the symptoms and facts of a case, nothing really important or useful is gained, either in a diagnostic or therapeutic point of view, by allowing the mind to wander into channels into which the etymology of a name, or the suggestions raised by the vague signification of a term, may at the outset tend to direct its inquiries.

I am not acquainted with any term whatever, within the range of medical lexicography, against which the serious objection may not be urged, that it, the term, *per se*, frequently misleads, and wrongly impresses the mind. Let this description of a case elucidate further the meaning of this observation. A man is conveyed to the hospital under the condition of severe concussion of the brain. In a short period, under appropriate treatment, *reaction* succeeds, and surpasses the bounds which the dresser or surgeon may conceive as the safe and due amount. The patient is accordingly doomed to lose blood. The quantity withdrawn may

somewhat exceed the *tolerance* of the system: the reaction, however, is subdued, and the patient may have sunk into a favourable quiescence. But after the lapse of an interval of no longer duration than a day or a night, another species of reaction is declared in the system, different most decidedly from the former; the former was distinguished only by an innocent and quiet rise in the standard of the circulating system; this, however, is complicated with an abruptness and rapidity of manner, a restlessness of conduct, which requires the personal vigilance of the nurse—a passionate excitement of the mind, and boisterous loquacity, which bring into a foremost position in the mind of the anxious dresser—what? the high-sounding title of phrenitis! This is enough. A polar luminary has arisen to guide in complacent safety his troubled course. Phrenitis! phrenitis! is it possible for a man with phrenitis to escape with his life without bleeding? it cannot be; for to my experience, even among the most practical men, it is regarded as the unerring watchword for venesection: nurse, therefore, bring the bason and bandage!

The happy *polarity* of this needle-like *phrenitis* conducts once more his misguided hand to his pocket in search of the implement for further bleeding; and thus the poor man is condemned to a further loss of that very fluid and stimulus the want of which was the positive cause of all his sufferings, and all his enfeebled excitement. Now suppose the attendant here had altogether refused to accept the guidance of the mere term phrenitis, and that he had, on the contrary, determined first to investigate the real and plain facts of the case, before abandoning himself to the adoption of a course of treatment so fatal to the interest of his patient. To any one possessing a slight acquaintance even with the principles of diagnosis, the significant language of two simple circumstances in this case would have induced at once a change in the whole course of thought and action. Notwithstanding all the general appearances of phrenitis, there are two things which most pointedly contradict that idea: the pulse is small, quick, and quite compressible; the surface is cool, clammy, and perspirable, not hot and dry; and it should follow, it appears to me, that a *stimulus* would procure sleep to this man. Wine, or gin and water, or porter, is given: all his agitation subsides into quiet repose, the pulse lowers in frequency, and the calm which succeeds announces altogether a favourable change. It must be now seen that this was not phrenitis; it was that state which some authors have called delirium traumaticum; not unlike delirium tremens in real pathology; or, as some will scientifically have it,

delirium cum tremore. Well, proceed with the supposed circumstances, and conceive the dresser, against whom it was proved that he had formed an essentially false conception as to the character of this case, to have been required to record the particulars. It is obviously certain that the tutelar epithet would continue to guide his pen, as before it directed the movements of his hands. Phrenitis would still tinge with its predominant hue the meaning and style of every expression. But if this word had not presented itself to his mind, if the conventional sense of a mere word had not thus led him into irrelevant paths of thought, and carried him away like an unbridled horse does his unskilful rider, or as the machinery of sounding language sometimes leads the mind of a youthful student in the art of elocution away from its plain thoughts into the regions of embarrassment and confusion, a sensible and faithful delineation of facts would have been exhibited in the history of the case. Gentlemen, experience and useful knowledge are to be acquired, not by the accumulation of words with little weighty and definite meaning, but by the record of facts and realities. That student unquestionably is the most superior in mental qualities who acknowledges the guidance of no conventional phraseology, who refuses to follow in blind obedience the ideas which a *term* may happen to suggest. His nobler course is that of independent industry and application in reading the language of disease for himself.

These observations it has seemed to me desirable to premise before submitting to you a plan which I have long thought may subserve many of those important obligations which every medical man owes to the science of his profession—that, namely, of embodying with scrupulous truth and accuracy the facts and cases which his daily intercourse with disease must bring within his own immediate notice. The “taking of a case,” or to present in words and language a picture of a disease, from its origin to its termination, such that another person at some distant place, who peruses this description, will be able to recognise a similar disease, and identify it with confidence with that observed by its first historian, is a qualification which few possess. To engage oneself in the work of systematically arranging and recording the evidences of any given case, is virtually to submit oneself to the process of self-education. No man can spend an hour in study and reflection upon the varied phases under which disease may present, much more become the historian of disease, without substantial improvement to his own mind, and without making an important addition to the treasury of his practical knowledge. Yet, how few are the

cases in which young men, whose career of studentship was marked by talent, industry, and superior knowledge, whether located in some distant village, or in some more favourable spot in nearer access to some one of the numerous *emporia* of learning which at the present time render distinguished among nations the history and aspect of this country, have risen above the pressure of the novel duties and obligations by which they find themselves surrounded when making their first introduction into the busy scene of society. But the very duties which they discontinue to observe and perform are those which unquestionably appear to be the best calculated to raise more and more the standard of their competency for the responsible engagements of practice. Let me exhort you, whom I am may be now addressing for the last session of your hospital education, when engaged in another scene of exertion not to disregard the duties which you owe alike to your own talents and to the common cause of our common science. At present, however, my part is not to instruct you under the capacity of practitioners, but rather to assist your exertions, and as far as I can to direct your steps towards the right channel by which the greatest amount of useful knowledge is to be attained, the greatest measure of profit is to be realised, within the limited period of your studies under the roof of this hospital. As the correct and clear registration of a *case*, however simple its character, presupposes on the part of the observer a sufficient amount of information to enable him to recognise and classify those symptoms and circumstances which most strikingly distinguish that particular form of disease, it is scarcely desirable for the student, whose hospital practice is about to commence only, to engage himself in the practical occupation of taking cases, which may be advised as labour of considerable and permanent profit to him whose education is more advanced. It is because the distinguishing characters of disease are not intimately and generally known that many of the numerous cases of novelty and value which are weekly recorded in our periodicals are so voluminous, verbally circuitous, and consequently unreadable; repulsive to the patience of the general reader, and therefore devoid of interest and utility. If brevity be the soul of wit, it is also the very essence of case-taking. Time is gained thus both by the reader and the writer; the picture of the disease is more striking; the impression which it produces more vivid and persistent. If it were possible, which it undoubtedly is, to reduce the work of registration into some form of algebraic brevity, the method might be rendered suitable to the time of general practitioners, in whose hands an accumulated

treasury of facts of incalculable value and importance might be rapidly collected, from the safe and instructive vantage-ground afforded by which the whole realms of past practice and experience may be surveyed by each individual member. Recollect that *experience* is not transmissible as a comfortable heritage from one generation to the succeeding, like some portable commodities, of whose nature you may form a very shrewd conception. You yourselves *must* labour as assiduously and ardently as those who have gone before you, if your desire be to become versant in what must be defined the *empirical* tactics of real practice. But do not fail to understand that he who starts in familiar possession of all the improved knowledge and science of the day, the best chemist and physiologist, *ceteris paribus*, is he who will most quickly command the mastery over the tactics of which I speak. Whichever the method which the taste of the student or practitioner may induce him to select, in all cases certain preliminary circumstances must be determined which affect influentially the views and opinions that may be subsequently formed in regard to the existing state of the person under enquiry.

How long is it since your present illness commenced, generally forms the leading enquiry: it will be afterwards explained how much real and practical information may be developed in the reply which the question thus simple relating to the *duration* of the attack is calculated to elicit, as this circumscribes the enquiry within the bounds of a definite period of time. For the most part the examination resolves itself into two obviously distinct portions: that which refers in the first place to the history of the individual himself *before* the commencement of his present complaint, under which the question of *family* history or *hereditary* predisposition would appropriately range, and that, in the second place, which involves the natural history of his present illness. There is, however, another method of case-taking, which for some years I have been in the habit of recommending as the most complete and systematic which the student can desire; according to the views, that is, which I have entertained of the practical value of such a practice, and the general profit which may accrue from its universal adoption. The more natural plan has long appeared to me to consist in first patiently *listening* to the tale of facts and sufferings which the patient himself has to tell. Under this head, also, what may be regarded as *accessory* evidence afforded by the friends and relatives of the patient may be regarded as ranging under the same department with that under which it has been proposed to consider the story related by the patient

himself. In relation to this *historical* species of evidence, it was suggested in a former lecture that the term *subjective* should be employed as the discriminating symbol; the simplicity of this term forms its chief recommendation; it denotes the *source* (the subject or patient) from which the evidence is obtained.

As a record of cases must owe a considerable portion of its value to the readiness with which it admits of reference, the plan adopted should be uniformly adhered to, so that the arrangement in a short time will become so familiar to its author that no time can be felt to have been unprofitably expended, nor any trouble experienced in referring to any former case, or in searching for any individual point in the history of a case, to elucidate and explain a question of doubt or difficulty which may happen to be at the time under consideration. The book should be divided into *columns*, each headed distinctly and briefly, according to the subject to which it is devoted, and the account of the case should always be marked by the name of the disease at the head, according to the following plan. (See next page.)

At one view it may be observed, according to this system of registration, that each case in all its particulars is planned out into two essentially distinct portions; that, namely, which embraces all incidents respective of the patient's previous history; that also of his family. This head likewise comprehends the remaining circumstances which are always required to render complete the preliminaries of the case; name, age, employment, &c.; the causes, actual and predisposing, tending to the production of the existing state; and so on with reference to numerous other particulars which the peculiar nature of the case may involve. The second portion of the account dates from the time at which the observer was summoned to attend the case. It is at this stage that accuracy, descriptive and observant, should mark the statements recorded. When the actual observer becomes himself the historian of facts and phenomena, what palliative reasons can be offered in extenuation of the discredit which the wrong appreciation of symptoms and appearances, in gravely attempting the historical delineation of disease, would justify us in bringing down upon his reputation.

Under the head of "progress," particulars may be multiplied and accumulated according to the time at the command of the reporter, or the singularity or importance of the case. But it is here desirable to state that the real value of a case bears any other than a *direct* proportion to the voluminous minuteness with which the *daily* changes and phases of the case may have been registered. The numerous diurnal irregularities

which chequer the tenor of every the most ordinary form of disease, require, notwithstanding, the exercise of sound discriminative judgment in detecting and selecting the least useful and important from those signs and circumstances which are indispensable to the epitomised representation of the disease which it is designed to exhibit and preserve.

But while this observation will be felt by practitioners as conveying the real truth, it is quite necessary to remark, lest it should operate discouragingly upon your exertions, that it is impossible for the student to be too minute and circumstantial (keeping, of course, in studious strictness, within the limits of his patience and ambition) in the account which he may seek to draw up of a case. The longer the duration of the period during which the mind is maintained in direct intercourse with external phenomena, it is obvious that the more complete and persistent the impress which it receives.

It was just now advised to premise the account of a case with the name of the disease. It is easy enough to adjudge correctly the nature of a *case*, when the bone has emerged through the investing muscles and integuments, and call the case one of compound fracture; but there are other instances in which it is difficult to assign a name. This observation renders it proper to recur to the particulars of the plan for taking cases which has just been proposed for your consideration. I can give the assurance from my own experience that when the mind is habituated to a uniform system of *examining* cases, each step into the inquiry becomes suggestive of numerous collateral considerations, which become important in their turn in the assistance which they afford to the mind in its endeavours to unveil the truth of all surrounding fallacies and obscurities.

Let the question of *age* be first considered. Suppose two cases to happen parallel to each other in general character. A child receives a slight injury upon the head, just enough to produce the symptoms of *concussion*,—a man in sound health receives a similar injury, and proportionate in severity. On the abstract circumstance of age, what prognosis or inference should be formed as to the amount, or in what light ought the probabilities of the two cases to be regarded? Practical experience has proved that injuries of this description are unquestionably more serious in the case of the child than that of the adult. The explanative reasons are, that in the child the standard of the circulating energies is higher; the irritability of the nervous centres correspondingly greater; hence the proneness to hydrocephalus.

Suppose two other comparative instances. The osseous system becomes the seat of

COMPOUND FRACTURE OF THE LEG,
Complicated with severe irritative fever.—Recovery (or death).
SUBJECTIVE ACCOUNT.

Date.	Name.	Age.	Residence.	Married or Single.	Employment.	Habits of Life, or Mode of Living.	Further Particulars.
Feb. 8, 1843	Edward Morgan	Æt. 23	Rotherhithe	Married (3children)	Railway labourer	For the last two or three years has seldom drunk less than two quarts of porter in the day, while his diet has been low, poor, and meals irregularly taken. Generally goes to bed at 10, and rises at 6.	His wife says that he drinks much every day, and is out in all weathers; that he had a fracture of the same leg three years ago. He recovered in about two months without any thing unusual. Otherwise he has never complained, for his health is generally good. The accident happened on the 8th of February, at 8 A.M. and was caused by the train, the wheel of which passed over his leg.

OBJECTIVE EXAMINATION.

Present state.	Treatment.	Progressive termination of the case.
Saw the patient four hours after the accident. Reaction had scarcely commenced. The foot of the broken leg is cold, although the general surface is becoming warm. The tibia was comminuted into two or three pieces at the wound. The upper fragment projected out an inch. Neither the anterior tibial nor posterior tibial artery has been wounded. There is little foreign matter in the wound. The patient was not quite sober when the accident happened.	Several pieces of bone were removed. The fracture was easily reduced, and without much pain. The leg was dressed with simple warm water dressing, and placed on the double inclined apparatus.	During the first night the man became restless, the leg painful, and frequently disturbed by the action of the muscles. This state continued for several days. This state was much aggravated by a dose of salts, which his wife gave on the next day after the accident; but the thirst, fever, and restlessness, were much improved by allowing him to take nearly his usual allowance of porter, with good diet. The case assumed quite the hectic character during the suppurative stage; the system, however, was kept up by continuing the porter, and giving an addition of wine. In five months he returned to his work. The leg was somewhat shorter than the other, although not deformed.

mollities, or softening. One case happens in a child of two or three years old; the other in an adult person. In which example does the disease assume the gloomy character of fatality? The interesting observations lately published by Mr. Solly upon this subject have informed you all, that in the child the disease is innocent and simple, and always curable; in the adult it is synonymous, indeed, with certain death.

The medullary forms of carcinomata, degenerating into the hæmatoid fungus, may occur to the *child*, as is too frequently seen in the many cases which are brought to the Ophthalmic Hospital, in which the eye has become the subject of the disease; while the scirrhus variety of malignant disease in far the greatest frequency happens in persons whose age has exceeded forty. Numerous additional instances might be given in proof of the real diagnostic importance which attaches to the isolated circumstance of *age*.

Under the head of "*Residence*," more especially in *medical* cases, considerations of the greatest consequence arise. In fact, it might, without the slightest over-rating of truth, be declared, that the whole science of *physical geography* becomes, with reference to this particular, the instructive handmaid of medicine.

The latitude of the place of residence; the character and productions of the soil; the proximity of the miasmatic sources; the chemical character of the water which the locality affords; the contaminations of the atmosphere by any neighbouring malarial emanations; are considerations of no less scientific interest than practical value.

Under the subject of "*Employment or Profession*," the mind might have under cursory review a thousand objects of greater or less consequence to a correct system of examination. There are diseases the category of which is numerous, which are almost peculiar to artisans engaged in particular occupations.

Habits of life suggests too a course of inquiry which may tend to develop evidence of the most useful description in the light which it may reflect upon the character of any given case. Temperance or intemperance in eating or drinking is a point frequently of no inferior import in the prognosis to be formed. There are forms of disease to which the drunkard is liable, and from which the temperate man is exempt. A slight injury falls with disproportionate severity upon the system of the one, and quickly extinguishes its energies; while by the other it is sustained with remarkable impunity. There would be no impropriety in considering under this division the subject of *constitutional agency*. It is remote from my province to enter upon a discussion of this unsatisfactory topic. To the surgeon it is not very

important whether the patient's constitution belong to the *sanguine* in its peculiar temperament, or to the *phlegmatic*. In regard to the bilious or choleric, nervous and melancholic, the same observation of indifference might be made. It is a far more useful inquiry to determine how *low* or how *high* is the standard of the system's power. To indulge in a little political imagery: it were, in my opinion, a higher mark of good sense and philosophy in the surgeon to consider in preference and simply the means of aggression—the tendency on the part of the disease or injury, and the means of resistance or defence on the part of the constitution, when a man's brain is uncomfortably shaken, or leg unpleasantly broken. I do not think it customary, on the part of wise surgeons, to give way to much anxiety as to the exact tint which the hair and skin represent, or what the description of his temper may be; whether the one is white, or black, or any intermediate shade; or the other sour or sweet: no very important consideration is involved as regards the plan of treatment to be pursued.

There is, however, another method of *classifying objective* facts, in drawing up an historical view of disease, the superior value of which I have oftentimes experienced and acknowledged. Its principles consist in grouping together all the phenomena which are referrible for their cause and dependence to the *same system of organs*. Certain diseases are distinguished by a certain series of symptoms, which advancing physiology has compelled us to ascribe to the *nervous system*, as that by whose agency alone they can be produced. Delirium belongs as much to the brain exclusively as all involuntary muscular action; and all involuntary muscular relaxations relate to, and are caused by, disease or injury operating upon the *spinal cord*. In concussion, all mental phenomena have lulled almost entirely into the profoundest rest, while the agency of the spinal system continues unabated in its presidency over the inlets and outlets of the body: the sphincters are active and excitable. But in the still profounder coma of compression, the pressure of the effused clot or depressed bone extends with fatal force its counter-influence to the region of the spinal system; and in addition to the depth of snoring sleep, into which all cerebral influence is plunged in the general wreck, all spinal agency becomes suspended.

Dr. Hall, by the exercise of the most extraordinary inductive acumen, has succeeded in amassing on the simplest, yet the most clear and systematic principles of classification, the various morbid phenomena which belong to the department of the nervous system. To his valuable works, therefore, I must refer you.

In all diseases a certain number of cha-

characteristic phenomena equally depend upon the heart and circulating system; certain others upon the cutaneous and mucous tracts. Perhaps these are less pointed and definite in character than those which are caused by derangement of the nervous system.

According to the principles of this method of examining and recording cases, the systems of the *viscera* may be also collected into separate departments—as the respiratory, the glandular, the hepatic, the urinary, the genital, and uterine systems, and perhaps the lymphatic. The principles on which this system is founded are unquestionably the most philosophical. But recollect that its successful adoption presupposes the possession of exact knowledge with respect to the anatomy and the physiology of the systems into which the body is reducible.

From the materials thus hastily thrown together in relation to this mode of recording and *examining* cases of disease, I hope your natural ingenuity will render easy the construction of a tabular form, each column being headed by a separate system, by which the labour of registration may be still further abbreviated.

LECTURES

ON THE

PHYSICAL AND PATHOLOGICAL CHARACTERS OF URINARY DEPOSITS,

Delivered at Guy's Hospital, London,

BY DR. GOLDING BIRD.

LECTURE III.

Crystalline forms of uric deposits—Liebig's hypothesis—serious objections to—opposed to results of observation in disease—Influence of precipitating acids, mal-assimilation, checked perspiration, in producing deposits of uric acid.

HAVING pointed out to you the general chemical and physical properties of the urine, and explained the general classification of deposits, I have now to complete the chain of inquiry we commenced at our last meeting, regarding the peculiarities presented by the first class of deposits, especially of those which consist chiefly of uric acid or its combinations.

When uric acid occurs in the form of a visible deposit, it invariably presents more or less of a crystalline character. I have never met with it in the form of an amorphous powder, which its combinations with bases are so remarkably prone to assume. I am aware this is exactly the reverse of many statements which have been made on

the continent; but as it agrees with the opinion of Dr. Prout, and with careful observations made by myself during the last ten years, I feel no hesitation in making this statement to you as correct. Uric acid never appears in a deposit free from colour; it is certainly sometimes very pale, but more generally partakes of a yellow or orange-red hue; and hence the terms of yellow or red sand, which have been applied to such sediments. On collecting such a deposit, and examining it under a moderate magnifying power, you will be struck with the remarkable beauty and regularity of its crystalline form. It is rare to find the acid in the form of mere striated scales; in the great majority of cases it appears perfectly crystallised. You can readily discover the crystalline form of the deposit by merely placing a drop of the urine containing it, under the microscope furnished with a good half-inch object-glass. I, however, prefer allowing the urine to repose for a short time in a tall vessel, decanting the greater proportion of the fluid, and then pouring about a tea-spoonful of the lower turbid layers into a watch-glass, gently warming it to dissolve any urate of ammonia that might be present. Remove the supernatant fluid with a pipette, and replace it with a few drops of water. By this process you will render the crystals beautifully distinct, and will be rewarded for the trouble you have taken by the extreme facility with which the crystals can be examined, when the watch-glass and its contents are submitted to the microscope. In this way you will meet with crystals of uric acid which vary a good deal in figure, according to the rapidity of their deposition, the quantity of the colouring matter of the urine they contain in combination, and probably, also, on the nature of the agent which induced their precipitation. Two of these forms can be obtained artificially, by filtering a warm solution of urate of ammonia into a dilute acid; rhomboids or square tables being precipitated according to the strength of the solutions employed. The most frequent form of crystal presented by uric acid is some modification of the rhomboid, the acute angles becoming sometimes so obtuse as to cause the crystal to resemble a square table or even a cube. You can either examine these crystals by transmitted or reflected light. I think the latter has some advantages over the former. To examine a deposit thus, place between the stage of the microscope and the watch-glass containing the crystals a piece of black velvet or cloth; by means of a condensing lens, throw a strong light on the crystals, and then bring the object-glass in proper adjustment, and the colour as well as figure of the crystals will become beautifully defined on a black ground.

The diagrams before you represent views

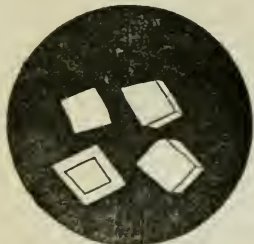
thus taken of uric acid deposits. Here (fig. 1), you have the rhomboids well

FIG. 1.



defined, some of them presenting the internal markings so frequently visible. One of these shows a curious modification of frequent occurrence, the obtuse angles being rounded, and the margin of the crystals on either side of these being excavated so as to resemble a spindle. In cases where the deposit is chronic, and appears to constitute the chief disease, a regular quadrilateral table is the result (fig. 2). In these an internal

FIG. 2.



marking, resembling a frame-work, is not unfrequent. Less common, but still occasionally met with, especially when mixed with urate of ammonia, is a remarkable form of uric acid resembling flattened cylinders :

FIG. 3.



these have been described and figured by M. Vigler, and I have repeatedly met with them. It is difficult to conceive these being

really cylinders, and yet you will frequently find them rolling over each other, and see their truncated extremities ; so that however extraordinary such a form may appear, no one can doubt its existence. By drying, they become very opaque, and they may easily be mistaken for thick rectangular tables.

When the urine from which these crystals have been deposited happens to be excessively acid, we find a remarkable tendency to the crystals becoming striated, and they then (fig. 4) often become more irregular in out-

FIG. 4.



line ; and the rhomboid and table, covered as it were with a dense series of black lines, are generally found mixed with some less defined in form. Elongated tables thus striated are not unfrequent : these are either free, or most frequently collected into little bundles, arranged as diverging fasciculi (fig. 5.) I feel inclined to refer the striated appearance of these crystals to the effects of the precipitating acid, as it may be artificially produced by the addition of a few drops of a strong acid to urine containing a large quantity of urate of ammonia. When you meet with a copious deposit of uric acid, in quantity sufficient to constitute gravel, the crystals will either present the cuboid form (fig. 2), or they will be found cohering

FIG. 5.



in little masses—in fact, forming minute calculi. In gravel presenting an orange-red colour, the crystals are generally thick tables or prisms, arranged in crosses, fasciculi, or stellæ (fig. 6), presenting a very

FIG. 6.



interesting appearance under the microscope. Where a well-marked tendency to the formation of calculous concretions exists, the gravel generally presents the appearances of irregular spinous masses, evidently composed of thick rhomboids cohering together (fig. 7). These sometimes occur in little

FIG. 7.



regular tufts or rosettes. It is not unfrequent to find uric acid crystallised as a hair, which hairs, indeed, are of very frequent occurrence in urine; in this state it resembles exactly, when viewed in the microscope, a mass of sugar-candy, crystallised as it generally is on a string or thread.

I exclude altogether from these remarks the case of small calculi or pisiform concretions of uric acid, as these are to be regarded as constituting a true calculous affection, rather than as a mere deposit capable of affording us assistance in diagnosis. One remarkable circumstance I will just allude to, viz. the immense number of pisiform concretions of uric acid, or urate of ammonia, which frequently occur in the same patient. I have seen nearly a table-spoonful of round yellow concretions, varying in size from a mustard seed to that of a pea, passed in a few days by one individual. If any of you are anxious to become more minutely acquainted with these deposits, I would refer you to MM. Vigla and Quercume's paper in *L'Experience*, to the first volume of M. Rayer sur les Maladies des Reins, or to my own paper in *Guy's Hospital Reports*, where all the varieties I have met with are figured.

You will have ample opportunities of becoming acquainted with these deposits whilst attending the practice of the hospital; and to enable you to recognise them with facility, I have had specimens of each arranged for microscopic examination, to which you will have access, and will have an opportunity of examining them, under certain regulations, through the splendid microscope made by Mr. Powell, and lately presented to the hospital by that excellent and liberal benefactor to our school, the treasurer, Mr. Harrison.

Uric acid in combination with a base has never occurred to me in crystals. Urate of ammonia in delicate needles has been said to occur in France; I have, however, never met with them in any of the specimens I have examined. Urate of ammonia very rarely occurs in minute globules, generally mixed with small crystals of uric acid. I have seen such a specimen lately (Fig. 8), in

FIG. 8.



a specimen of albuminous urine given me by Dr. Griffith. It is but the third or fourth I have met with in the course of several years.

The true nature of deposits consisting of urate of ammonia is shewn in a very interesting manner under the microscope. For this purpose, place a drop of the turbid urine in a watch-glass, and warm it. The urate will dissolve, and, on cooling, will reappear in the form of an amorphous powder. Again warm it, and as soon as the urate has disappeared, add a drop of any acid, as acetic or hydrochloric. On now having recourse to the microscope, you will find that rhomboids or tables of uric acid will be deposited instead of an amorphous powder, the acid having combined with the base and set the uric acid free.

Having discussed these points, I must now direct your attention to the equally interesting and important question of the pathological condition which can be regarded as the

Cause of deposits of uric acid or urates.

On this highly interesting part of the important subject before us, I might enlarge

much more than would be profitable to you. So many hypothetical views regarding the proximate causes of urinary deposits have been promulgated from time to time, that a volume might be filled with them. I think, however, it will save time to begin with the latest theory that has been announced—the now well-known one of Professor Liebig.

This philosopher admits the existence of a vital force, a *vis vite* in the animal frame, opposing itself to the chemical changes which all the tissues and fluids of the body would otherwise undergo. Thus, blood in the living vessel, and a muscle in a living healthy being, may remain chemically unchanged for an indefinite period; but as soon as life ceases, the fluid and the solid obey the ordinary laws of dead animal matter, and rapid putrefactive decomposition is the result. This view, I need hardly tell you, has no novelty; it is the old one of the schools. From this point Liebig set out with the opinion “that the oxygen of the air is the proper external cause of the waste of matter in the animal body; it acts like a force which disturbs and tends to destroy the manifestation of the vital force at every moment.”—P. 223. And as a consequence of this view, whenever a man, as in phthisis, dies with emaciation, his tissues are oxidized at the expense of the oxygen of the air, *and thus he literally rusts to death*. To prevent this occurring, either the vital force must be generated in sufficient intensity to effectually oppose this action of oxygen on living tissues, or some substance must be present which, opposing a less amount of resistance to the action of oxygen than an organized tissue, combines with it, and thus shields the latter from the influence of the former. The mucus covering the air-passages, and the bile in the intestines, are thus supposed to be the conservative agents which protect the tissues imbued with them from destruction by oxidation. A person remains in health, and of the same weight, when the vital force is capable of exactly opposing any undue oxidation of the body; whilst if it be incapable of effecting this, oxidation occurs. In those parts of the frame not directly exposed to the oxygen of the air, this important agent is conveyed in the red particles of arterial blood, which give up their oxygen to effect the destructive metamorphosis of parts not sufficiently protected by vital force. Hence, whenever the circulation is accelerated, as in fever, a greater quantity of oxygen must circulate through the body than in health, and a more rapid destruction of tissues will result. This, gentlemen, is a brief, and I believe a fair, statement of such of the views of Professor Liebig as apply to the subject we are considering. They are, to say the least, extremely ingenious, and exceedingly attractive; they are supported

by many very plausible arguments, independently of the high authority of their illustrious author, and now only require to have their accuracy tested by experience before their being generally accepted.

To explain the occurrence of uric acid, or urates in the form of sediments or concretions, Liebig supposes that, when by the effects of wear and tear of any part of the body, as by exertion, a portion of any tissue becomes unfit for its functions, its elements, under the influence of the oxygen conveyed to it in arterial blood, become re-arranged, and ultimately form certain ingredients, among which uric acid is the most important. This I have more fully explained in my first lecture. We have now to follow this uric acid a step further, and it is supposed by the author of these views that, by a continued action of the oxygen, more or less of this uric acid becomes converted into urea, a highly soluble matter, and carbonic acid; the former escaping by the kidneys, the latter by the cutaneous or pulmonary surfaces. This change is assumed to be most rapid and complete where respiration is most perfect, and consequently most oxygen taken into the system. Hence, in those animals which subsist upon azotised food, the quantity of uric acid, in relation to the urea, which ultimately appears in their urine, is in the inverse ratio of the rapidity of circulation, of the perfection of respiration, and consequently of the heat of the body. Thus the boa constrictor eats an enormous meal of animal food; but being a cold-blooded, slowly respiring animal, it takes in too little oxygen to convert the uric acid evolved by the secondary or destructive assimilation of its tissues into urea; and hence its semi-solid urine consists chiefly of bi-urate of ammonia, without a trace of urea. On the other hand, the lion and tiger, equally carnivorous as the serpent, are rapidly-respiring, warm-blooded animals; and hence, although, from their violent muscular exertions, rapid and great absorption of their tissues must necessarily occur, but a barely appreciable trace of uric acid occurs in the urine; for this acid, although abundantly generated by the metamorphosis of their tissues, is nearly entirely converted into urea on account of the free supply of oxygen by the perfect respiration of these animals. If the lion were, like man, to become omnivorous, and to partake of a mixed diet, partly animal and partly vegetable, the ingredients of the latter kind would require, for their oxidation, a considerable supply of oxygen, and thus would combine with a portion of that which, without their presence, would act on the uric acid to form urea. Thus, by shielding the acid from oxygen, less urea would appear in the urine, and an equivalent proportion of uric acid would be present.

And in this manner is the presence of uric acid in human urine explained by these views. Consequently, if these be correct, it is obvious that the imperfect admission of oxygen to the tissues must be a cause of the excretion of uric acid by the kidney; and if its quantity be considerable, a sediment, gravel, and ultimately, in all probability, a calculus, must result. We should therefore expect that any thing which prevents the conversion of uric acid into urea would produce an excess of the former in the urine; and from this reasoning, an imperfect conversion of venous into arterial blood, or, in fact, any serious interference with the perfection of the respiratory process, will become a cause of excess of uric acid in the urine. Conversely, if an excess of oxygen be admitted, then all the uric acid will become converted into urea, and the urine will resemble that of the lion or tiger, to which I have just referred. Hence the supporters of these views affirm that a deposit of uric acid or urate of ammonia is "very rare in phthisical patients," which disease is regarded by Professor Liebig as a case of excessive oxidation of the tissues of the body.

The correctness of these hypothetical views can alone be determined by extended experience: ingenious and interesting as they are, I must confess myself by no means satisfied with their correctness. I feel, moreover, that our treatment of calculous affections will become so modified by the hypothesis I have to-day explained to you,

that I should ill perform my duty as your teacher, did I not, even at the risk of becoming tedious, explain to you on what grounds I dissent altogether from the views of Liebig.

First, then, so far as my own experience has gone, these views are by no means supported by the results of clinical observations, which, after all, is the only correct test of these or any other theories bearing on our practice. Not to place any weight on my own experience, I will point out to your attention the results of the most patient and accurate series of observations of the urine in health and in disease, by M. Edmund Becquerel, to which I have before alluded. These observations were made in the great Parisian Hospital, and in many instances, if any thing were required to give confidence in their results, with the assistance of the celebrated Andral. These were made with no view of supporting any pre-existing hypothesis; and, consequently, are more entitled to our respect than any which can emanate from a partisan. I now place before you the result of a very few of M. Becquerel's observations on urine in disease: this will give you at a glance the actual quantity of uric acid and urea excreted in twenty-four hours, and the relation they bear to each other, uric acid being taken as unity. I have before shown you that the mean proportion of uric acid and urea excreted in 24 hours in health is, respectively, 8·1 and 255 grains, being in the ratio of 1 to 30·37.

Disease.	Quantity in twenty-four hours of		Proportion of uric acid to urea.
	Uric acid.	Urea.	
	Grains.	Grains.	
Healthy urine (general average)	8·1	255	1 : 30·37
Chlorosis, minimum of five cases	1·8	77·5	1 : 43
Chlorosis, maximum of five cases	6·	172	1 : 29
Pulmonary emphysema, with extreme dyspnoea .	4·9	172	1 : 35·1
Phthisical disorganization of the lungs, <i>copious sweats</i>	7·	?	
Phthisis, tubercles softened	9·1	66·7	1 : 7·33
Phthisis, three days before death	9·8	29·4	1 : 3
Morbus cordis, with jaundice	9·82	73·3	1 : 7·6
Acute hepatitis, with jaundice	11·18	61·6	1 : 5·6
Jaundice	17·75	285·6	1 : 16·1
Milk fever	19	133	1 : 7·47

The results of M. Becquerel's observations, which I now lay before you, are completely opposed to the hypothesis of Prof. Liebig.

That in cases of anæmia, the quantity of uric acid is actually diminished, is the general result, not only of Becquerel's experience, but is in accordance with every-day observation; whilst in all cases where feverish excitement exists, an excess of uric acid occurs. In the table just placed before you, we find, in five cases of chlorosis, the

quantity of uric acid secreted in twenty-four hours varied from 1·8 to 6 grains, the healthy standard being 8·1 grains. Chlorosis being a disease of anæmia, and, necessarily, oxygenation going on imperfectly, there ought, on Liebig's views, to be an excess of uric acid and deficiency of urea; yet the very reverse really occurs; for whilst a minimum of uric acid is eliminated from the system, the ratio of urea to uric acid either equals or exceeds the healthy proportion. Again,

to take an extreme case, one in which a person is suffering extreme dyspnoea from pulmonary emphysema: here an imperfect arterialization of the blood occurs, whilst the livid lips and cold extremities, so frequent in this state of things, all point out the imperfect admission of oxygen to the body; consequently, if Liebig's views were correct, we ought to have an abundant discharge of uric acid, and comparative diminution of urea; and yet what is really the fact? The quantity of uric acid excreted in twenty-four hours is nearly one-half of that which is evolved when healthy access of oxygen occurs, and the proportion of urea is really larger than in health.

To pass to the next class of cases; those in which it is, on these new views, supposed that excessive action of oxygen occurs, so that the unhappy victim *oxidises* to death. I allude to phthisis, in which little or no uric acid should be present in the urine, as all would be converted into urea from the excessive action of the oxygen. Here, again, the results of experience are precisely the reverse of what M. Liebig states ought to occur, the quantity of uric acid being almost always greater than in health, and the comparative proportion of urea reaching a minimum; the ratio of uric acid to urea being, in two cases of advanced phthisis, as 1 to 3, and 1 to 7·33, instead of 1 to 30·37, the healthy proportion.

Lastly, in cases where, from the presence of inflammatory action, a more complete oxygenation of matter capable of undergoing this change ought to occur, an extreme diminution of uric acid, and proportionate increase of urea, might be expected. Here, again, the very reverse is met with: a large increase of uric acid invariably takes place, and a comparative diminution, instead of increase, of urea.

Thus, gentlemen, it is evident that before Liebig's views can be admitted, the results of the observations made by Becquerel at the bed-side, which I have laid before you, must be shown to be utterly worthless. There remains yet another objection, which appears to me to be a serious one, to the validity of Liebig's position regarding the effects of perfection of respiration in preventing deposits of uric acid. It is true that in serpents, whose respiration is notoriously languid, their urine is solid from abundance of uric acid; and in the higher carnivorous mammalia the reverse takes place. Yet there exists a large class of animals, in whom respiration is most perfect, whose animal heat is superior to that of man, and the pulsations of whose hearts are much quicker; circumstances which demonstrate the free admission of oxygen into their systems. In these, therefore, no uric acid ought to

escape unchanged; and yet, in opposition to all this hypothetical reasoning, this acid is excreted in nearly as great an abundance as in serpents, in whom the very opposite condition of respiration and circulation obtains: I allude to *birds*, especially to the carnivorous ones; the semi solid urine which escapes from the cloaca of the jack-daw, parrot, and many other birds, containing a large proportion of urate of ammonia. Nay, so large is the quantity thus produced by these perfectly respiring warm-blooded animals, that many islets off the coast of South America are covered to some depth with impure urate of ammonia, from the marine birds, which are their chief inhabitants. This very substance constitutes the *guano* or *huanu* now so largely imported into this country as a valuable manure. This fact, I think, is sufficient to show that the ready admission of oxygen, even in animals whose organs of respiration is most perfect, is not sufficient to prevent the excretion of uric acid, and that Liebig's hypothesis here meets with a most serious, and, to my mind, fatal objection.

This, however, is neither the time nor place to criticise the pathology of any author; it is only necessary for me to direct your attention to it so far as the subject under consideration is concerned. Such of you as wish to become more fully acquainted with Liebig's ideas respecting the production of uric acid, I would refer to his own work, or to a very clever exposition of his views by his friend and pupil Dr. Bence Jones (*On Gravel, Calculus, and Gout*, 1842).

It is, gentlemen, a much easier task to throw down an hypothesis than to build up a better on its ruins. I think, however, that by carefully drawing inductions from the results of accurate observations, we shall get somewhat nearer the truth than we shall by making theories, and then dove-tailing our facts to suit them.

It has been, then, observed that uric deposits are most frequent in those persons whose progenitors have previously suffered from calculus or gout, or any ailment in which a tendency to an excessive production of uric acid exists. It has also been correctly stated by Dr. Prout, as the result of his accumulated experience, that flabby, strumous people, of marked sanguineous temperament (*hæmotrophy*), are peculiarly subject to these deposits. Among other well-recognised physiological causes I may enumerate, excessive meals, whether of animal or vegetable food, especially the former; exercise used so soon after a meal as to interfere with digestion; too little exercise and general sedentary habits, so as to interfere with the tone of the functions of the body; the use of saccharine or acescent

articles of food; and, lastly, exposure to cold, or the presence of any cause which checks the cutaneous transpiration.

The circumstances thus enumerated have been so repeatedly observed to be followed by discharges of uric acid in the urine, that no doubt can for one moment exist as to their efficacy in producing this state. A single glance at these statements will at once shew the propriety of regarding them in two points of view: 1st, as affecting the solubility of the uric acid naturally present, without influencing the quantity; 2dly, as increasing the quantity generated.

Admitting, what I conceive scarcely can admit of a doubt, that uric acid exists in urine in combination with ammonia, it is obvious that if any change takes place in the system which can remove the ammonia, uric acid must, of necessity, occur as a deposit. Let us, then, inquire what are the possible sources of such a precipitating agent. First, I should direct your attention to the fact, that two acids, at least, have been proved to exist in the body in a free state, the lactic and hydrochloric; of these, whilst both are met with in the stomach, the former is excreted at the cutaneous surface. In health, these acids are necessary ingredients of the gastric juice; and in disease they very frequently increase to an extraordinary extent. This has been placed beyond all doubt by the researches of Dr. Prout. I have also recorded* cases of this kind, in which I submitted to analysis the vomited fluid. In one case of scirrhus pylorus, in which the patient frequently vomited several pints of fluid in the course of 24 hours, I found in each pint a quantity of free hydrochloric acid equal to 22 grains of the acid of the Pharmacopœia, in addition to a sufficient proportion of some organic acid to neutralise nearly seven grains of pure potassa. At another time the hydrochloric acid nearly disappeared, and the quantity of organic acid existing free in the fluid was capable of saturating nearly 17 grains of pure potass.

As we are thus furnished with positive proof that a large quantity of free acid frequently is generated in the stomach, it is obvious that unless it be got rid of by the process of assimilation, or evaporated in the perspiration, it may reach the kidneys, and, by combining with the ammonia of the urate, cause the precipitation of uric acid in a free state, and thus become a primary cause of gravel. And it is a fact capable of verification in every case of irritative dyspepsia, that deposits of free uric acid are exceedingly common. Thus, then, this explanation of one source of uric acid deposits is not an unbiased hypothesis, but is supported by the results of experience. It may,

indeed, be proved by administering to a person in health a sufficient quantity of some acid which is capable of escaping the converting power of the stomach—as sulphuric, hydrochloric, or phosphoric. In the majority of cases, this will be followed by the appearance of crystalline grains of uric acid in the urine. Hence the propriety of prohibiting the use of acids and of those matters which may generate acids in the stomach, as preparations of sugar, in persons predisposed to these deposits. That the state of cutaneous transpiration is influenced by the condition of the stomach, was long ago proved by Seguin. This philosopher shewed that, as a mean, eleven grains of matter were exhaled from the cutaneous surface in a minute. He also proved that exhalation becomes less abundant after partaking of food, and is sensibly lessened when digestion is imperfect. Hence, if an acid capable of acting as a precipitant of uric acid be one of the products of cutaneous exhalation, it is obvious that indigestion may be an indirect cause of uric acid deposits by lessening the amount of matter exhaled from the skin. This is one of the modes in which a bulky meal, or exercise during digestion, enumerated by Dr. Prout among the causes of these deposits, may act.

A totally different and very ingenious explanation of the influence of suppressed perspiration in producing deposits of uric acid, has been given by the zealous and talented advocate of Liebig's views, to whom I have before referred, Dr. Jones. He has supposed that when perspiration is checked, the lactic acid usually thus evolved is retained in the circulation, and, by the affinity of its elements for oxygen, combines with it; and thus shields the uric acid generated from the tissues from its action.

The other causes of uric acid deposits which we have to consider are referable to whatever produces an undue formation of this acid; so that the total quantity produced is greater than natural. Dr. Prout has supposed that mal-assimilated azotised ingesta, under certain circumstances, enter the circulation, and are eliminated by the kidneys, as urate of ammonia—an opinion certainly in accordance with daily experience. If the ill-digested meal is composed of food rich in nitrogen, as meat or fish, more uric acid, *ceteris paribus*, appears in the urine than if highly carbonised ingredients, as bread or potatoes, had been taken into the stomach. This is well shewn by the fact mentioned by a late writer on this subject, that a cup of strong coffee which contains a crystallized body, caffeine, rich in nitrogen, will, in many persons, speedily produce a discharge of urine turbid from the presence of urate of ammonia. I need hardly remind you that this fact is altogether opposed to

* MED. GAZ. 1842, pp. 395, 426.

the illustrious chemist to whom I have so often referred; but, nevertheless, the truth of these statements is unquestionable.

Another very important series of causes influencing the presence of deposits of uric acid or urates, are found in cases of such organic or functional diseases as either interfere with digestion or assimilation—as in affections of the liver, heart, lungs, or stomach.

An idea was thrown out by the late Dr. Marcet, in his work on Calculous Diseases, that interference with the healthy action of the skin might, in some way, account for calculous deposits. I have before drawn your attention to the popular notion of deposits of urate of ammonia being indicative of the existence of a “cold,” and have pointed out to you the manner in which a precipitating acid may be conveyed to the kidneys when the function of the skin is interfered with. But it is quite possible that this mal-performance of the cutaneous function may really positively increase the quantity of uric acid or urea excreted by the urine; the former apparently being most frequently produced.

You will recollect that, from a series of very careful experiments, Seguin determined that, on an average, eleven grains of matter were exhaled from the skin in a minute. This is equal to 15840 grains, or 33 ounces, in twenty-four hours. Hence the weight of the perspired matter is little inferior to that of the urine. Anselmino afterwards made this matter the subject of examination, and found that, as a mean, it contained .88 per cent. of solids; and 100 grains of such solid extract contains 22.9 grains of saline matter. From these data a simple calculation informs us that in every twenty-four hours the matter exhaled from the skin will consist of

	grain.
Organic matter . . .	107.47
Saline matter . . .	81.92
Water (and carbonic acid) .	15700.61
	<hr/> 15840.00

The nature of this organic matter is but imperfectly known: it certainly contains lactic acid with some highly azotised matters, resembling those obtained by digesting muscular tissue in water, in addition to a body which, if not urea, appears to me closely to resemble it. Indeed, Fourcroy positively detected urea in the sweat of a horse. If, then, the action of the skin becomes checked, all or part of the 107.47 grains of organic matter must be retained, and, being highly azotised, will, in all probability, evolve from the system by the kidneys in the form of uric acid or urate of ammonia.

In this manner, in addition to the precipitation of uric acid by the effects of the

acid normally evolved at the surface of the skin, a positive increased quantity of this acid may be generated, in the attempt to dislodge from the system those ingredients rich in nitrogen which the skin is incompetent to excrete, from the influence of some cause interfering with its healthy functions. I would throw it out, as a mere suggestion for further inquiry, whether the curious fact of animals so totally opposed in the rapidity of circulation, respiration, and animal heat, as birds and serpents, evolving the same product in their urine, could meet with a possible explanation in the state of the feathered covering of the one and the scaly covering of the other class, being such as to preclude any amount of cutaneous exhalation?

ESSAYS ON THE DISEASES OF THE

HEART, GREAT VESSELS, AND CIRCULATING FLUID.

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(For the London Medical Gazette.)

[Continued from p. 653.]

GENERAL PATHOLOGY OF THE HEART.

Of the Abnormal Sounds of the Heart— Peculiar Noises which replace the Natural Sounds.

The abnormal sounds recognized in connexion with the action of the heart are *intrinsic* and *extrinsic* to the organ, *i. e.* they take place within one or other of its cavities, or they are produced between the heart and its containing bag, the pericardium. Intrinsic abnormal sounds are spoken of under the generic title of *blowing* sounds or murmurs; and these, according to their degree and intensity, pass into *filing*, *rasping*, and *sawing* murmurs, and in some rare cases where they acquire a shrill, whistling, or humming character, into *musical* murmurs. Extrinsic abnormal sounds are comprised under the common head of *friction* murmurs.

Blowing murmurs (*Bruit de Souffle*, Fr.)—The name here is the best definition of the sounds which replace those that are natural to the heart. They are such as may be produced by closing the lips in different degrees, and blowing or inspiring through them with different degrees of intensity. Blowing murmurs, indeed, are observed of every shade of

distinctness ; in one case they resemble the softest inspiration that can be made ; in another they have the louder, rougher, character of the sharp puff employed in blowing out a light. They are also heard over very different extents of the thoracic parietes : sometimes limited to a very small space immediately over the seat of one or other of the orifices of the heart ; in other instances they can be heard at once as low as the seat of the apex, or even lower, and as high as the top of the sternum, and for various distances along the course of the great arteries of the head and extremities. Blowing murmurs are heard in the great majority of instances instead of the first sound : they have different lengths in different cases : here they are short and abrupt ; there so much protracted as to extend over the interval occupied by the lesser silence and the second sound, which they then obscure. They occur singly or double in the course of a beat, and are either constant or intermittent. Blowing murmurs are by far the most common of all the abnormal sounds of the heart.

Filing, sawing, and rasping murmurs are but exaggerations of the softer blowing or bellows murmur ; they may be imitated very closely by reiterating the letters S and R with varying degrees of force : S, s, s, s ; or, R, r, r, r.

The explanations which have been given of these abnormal murmurs by different observers, differ widely from one another. Laennec, strange to say, was strongly inclined to maintain that they were not connected with any organic lesion of the heart or arteries, but were the effect of simple spasm, or of some disturbance of the innervation of the central organ of the circulation. Almost at the same moment, however, he speaks of the *bruit de soufflet* as almost invariably accompanying a contracted state of one or other of the orifices of the heart. In his attachment to abstract vitalism, Laennec is here seen obviously neglecting for a moment the dictates of experience, which both in his own day, and in thousands of instances since then, have demonstrated the intimate connexion of blowing murmurs with organic changes about the ventricular orifices of the heart. Nevertheless, Laennec does not stand alone in his interpretation of the blowing murmur. So accurate and practised an observer as M. Piorry has stated that among sixty

females affected with disease of the heart, where contraction and ossification of the orifices of the organ were found in the proportion of one half, he had not been able to distinguish blowing or rasping murmurs above once in twenty cases." M. Bouillaud, in commenting on this sentence, on the contrary, declares that "he has no idea of being guilty of exaggeration, when he says that in upwards of two hundred cases of contraction of the cardiac orifices, accompanied with induration of the valves, save in two or three instances, in which auscultation was not perhaps instituted with all necessary care, he had not only discovered blowing murmurs himself, but given numerous pupils the opportunity of hearing them."

In questions of this kind, and where opposite opinions are espoused and defended by men of intelligence and probity, there is generally right and reason in greater or less degree on both sides. So it is with reference to the blowing murmurs of the heart. They are not in every instance indubitable evidence of organic disease of the heart ; they occur without contraction of the cardiac orifices, and without induration and insufficiency of the valves ; so also in a few rare instances contractions of the orifices have been met with in which no blowing murmurs had been discovered during life. With a *soft* blowing or bellows murmur we shall generally do well to pause before pronouncing definitively on the presence or absence of organic disease ; with a *harsh* rasping or sawing murmur there is seldom room for hesitation—49 times in 50 it occurs along with alteration about an orifice or a valve. The sole essential condition to the development of the blowing murmur is vibration set up in the column of circulating fluid as it is entering, passing through, or quitting the heart ; and as the mechanism by which vibrations are set up, and the conditions that favour their establishment, are now satisfactorily ascertained, we are not often, at the present time, much puzzled to assign its proper value as a diagnostic indication to any abnormal murmur about the heart.

There can be no question but that in the immense majority of instances blowing murmurs of one degree of intensity or another occur in cases of contraction of the aortic orifice ; the

valves which guard this orifice need not necessarily be diseased, or inadequate to their office of preventing regurgitation into the ventricle. It is the same with reference to the pulmonic-arterial orifice; with this understanding, that as all diseases of the right side of the heart are in a vast proportion rarer than those of the left side, so implication of the pulmonic orifice is but seldom the cause of bellows or rasping murmurs. Again, blowing murmurs are almost invariably encountered along with *alterations of the valves*, as when their surface is roughened, covered with excrescences, occupied by depositions of cartilaginous, atheromatous, or bony matter, and when they are simply thickened and deformed, without being thereby rendered unfit to discharge their office of guarding the orifice to which they belong, and without that orifice being narrowed in any appreciable degree. Further, blowing murmurs generally accompany simple *insufficiency of the valvular apparatus* situated at one of the orifices of the heart: the valves may have contracted adhesions with the neighbouring wall of the heart or artery, or they may have shrunk and become atrophied, or the orifice where they are placed may have become enlarged. Still further, blowing murmurs are frequently heard in connexion with simple hypertrophy of the ventricles, and independently of valvular disease. Murmurs, absent at other times, generally occur during the attacks of palpitation to which patients affected with hypertrophy are subject. It is possible that the violent action of the heart then either forces the auriculo-ventricular valves, or that the augmented power is sufficient to induce vibration in the column of blood thrown into the aorta as it is passing over the slight natural inequalities at the root of that vessel. Finally, and it is of signal consequence to note the fact, blowing or bellows murmurs are frequently observed among chlorotic and ænemic individuals, as also among subjects who have been reduced by accidental hæmorrhage, or the free use of the lancet.

It has been stated incidentally that the essential condition to the development of blowing murmurs was vibration set up in the column of circulating fluid as it is entering, traversing, or quitting the heart, or one of its cham-

bers. The progress of fluids through tubes of every description, however smooth their surface, is retarded by friction against their interior, and the retardation is greatly increased by all projections, irregularities, and sudden bendings. Wherever there is friction, there vibration also occurs, and the friction and vibration have only to be increased to a certain amount to become appreciable by the senses. Any roughness about an orifice or a valve, any contraction of an orifice, any imperfection or insufficiency of a valve, must, therefore, at once be seen as a cause adequate to increase in an especial manner the friction and vibration of the column of fluid that is passing over them, and these consequently are now admitted on all hands as the most efficient of all the sources of the preternatural blowing, or bellows and rasping murmurs, that so constantly accompany disease of the heart.

But it must still be admitted that the *action of the heart becoming unusually abrupt* under any circumstances, is adequate to excite vibrations in the fluid which it is propelling, and so to induce blowing murmurs of various degrees of intensity. The *tension of the arteries being diminished* under any circumstance would also seem adequate to induce the same state of things, and to be followed by the same phenomena. The *circulating fluid becoming attenuated* at any time, especially in connexion with the other circumstances in which such a condition takes place, is rendered liable to be thrown into vibrations, and its passage through the heart is then proclaimed by blowing, and even by rougher filing murmurs. The same thing must be said of *great losses of blood*, which have the effect of rendering the action of the heart abrupt, of diminishing the tension of the arteries, and very speedily of inducing an attenuated state of the circulating fluid, each a condition of itself adequate to excite sonorous vibrations in the blood. In the course of physiological experiments it has been distinctly ascertained that an obstacle which produces no perceptible vibration or murmur, when water thickened with gum or sugar is transmitted through a tube, is competent to excite both vibrations and sounds that are distinctly appreciable by the senses when the fluid forced through the tube is pure water. It is

by no means uncommon to discover a faint whiff, or stronger puff, or bellows murmur, about the præcordial region of delicate persons, youthful in age, of susceptible or nervous temperament, and who may, or may not, have been subject to occasional nervous palpitation, to bleeding from the nose, and perchance to slight hysteria. Here there can be little doubt that the blood is less dense than proper, and that the vessels are not duly distended: that the action of the heart is abrupt and jerking, under such circumstances, is generally distinctly perceptible.

What has been designated as the *musical murmur of the heart* would appear to be but the rasping or sawing sound with its highest degree of acuteness: it has in different instances the character of the cooing of the turtle, or the cry of the quail, or it is a shrill whistle; it is in fact a true *sibilus*, in the sense in which this word is used in connexion with affections of the bronchial tubes. This exaggerated blowing murmur never occurs save along with other unequivocal indications of serious organic disease of the heart. It generally depends immediately on contraction of the aortic orifice, accompanied in the majority of instances with cartilaginous, atheromatous, or bony deposition into the substance of the semilunar valves. The musical murmur of the heart is always an interrupted murmur, and systolic in its tune.

There is another kind of murmur or sound, which requires particular indication, and which, although not connected with the heart immediately, may still with perfect propriety be spoken of in this place. The murmur now alluded to differs from all those that have hitherto been mentioned, in being continuous, and not interrupted like them. This particular murmur has different characters in different cases. It is sometimes described as the *continuous murmur*, without other qualification; and again it is referred to as the *continuous musical*, or simply the *musical murmur*. Laennec, in speaking of this murmur, expresses himself thus: "In very rare cases the bellows murmur changes, in the carotids especially, and even in the heart, into a continuous murmur analogous to that of the distant sea, or to that which is heard when the ear is applied to the mouth of a large univalve shell." In

other instances the continuous murmur here referred to by Laennec possesses a humming character like the tone produced by the French-top. This is the sound which is spoken of by French writers under the name of 'bruit de diable,' a toy or play-thing, which makes a humming noise when spun, and which some of our literal translators have rendered by the words 'sound of the devil!' Laennec, and the generality of writers, those of France up to the present hour, have ascribed the continuous or humming musical murmur to the arteries and to the heart. We have already seen to what the occurrence of the piercing blowing murmur was due when it occurs in the heart, and simultaneously with the systole of the ventricles. The continuous musical murmur has a very different signification, inasmuch as it would appear not to be connected with the heart at all.

It was so late as the year 1837, that Dr. Ogier Ward, of Birmingham, showed for the first time that the continuous musical murmur was neither referrible to the action of the heart nor to any pathological or peculiar state of the arteries, but was due, as he conceived, to some obstruction in the veins, to the existence of some cause calculated partially to interrupt, and so to throw the current in the interior of these vessels into a state of vibration. This is the interpretation now generally admitted in England, of the seat and mode of production of the murmur in question, although it is not even hinted at in the latest works of highest character and authority, published on the Continent.*

The pitch of the musical murmur heard in veins is always much lower than any that occurs in arteries; the pitch of arterial murmurs, as Dr. Hope has well observed, may be generally represented by the whispered letter *R*; that of the veins, on the contrary, is as low as the word *who*, pronounced continuously with a humming sound. We occasionally observe the continuous humming or proper venous murmur to be augmented at the moment of each systole of the

* I allude particularly to the elegant and compendious *Traité pratique d'auscultation*, of Messrs. Barth and Roger, and the elaborate *Traité clinique des Maladies du Cœur* of M. Bouillaud, both published in 1841, and to both of which I am constantly referring for assistance and further information as I rewrite these Essays, from notes made some years ago.

heart or beat of the pulse. These augmentations are generally nothing more than the addition of an arterial whiff to the venous murmur.

The most frequent immediate cause of the kind of murmur under consideration would appear to be compression of the veins; continuous murmurs are very certainly sometimes the effect of the pressure of the stethoscope at the moment of observation; they may almost invariably be produced at will in the most healthy individual, by applying the stethoscope more or less firmly over the great venous trunks at the lower part of the neck. Where the murmur already exists, gradually increased pressure with the edge of the stethoscope applied over the internal jugular vein raises the sound by degrees to a very considerable pitch of intensity, and occasionally gives it a character of great complexity, the loud continuous humming tone being mingled with other whistling and cooing sounds, which are undoubtedly due to the compression of more veins than one, and the transmission to the ear of the sounds elicited from each. Compression of the veins, however, is by no means the only cause of the continuous musical murmur; it is enough that the veins be insufficiently filled, and that the blood they contain be of a dilute and watery nature, to have it falling into vibratory motions that become sensible to the ear as musical tones.

Continuous musical murmurs of veins are very generally perceived in the same class of persons as those already indicated as the subjects of blowing murmurs of the heart unconnected with organic disease—persons whose blood is not only below par in point of quantity, but also below par in point of quality—persons whose blood is thinner and more watery, and whose vessels are more flaccid than those of robust individuals consuming and assimilating adequate quantities of nutritious food. Instead of bleeding generally and locally, therefore, and insisting upon a rigorous abstinence and absolute quiescence, as we so commonly do when we have to deal with murmurs depending on organic diseases of the heart, we constantly see the propriety of recommending a plentiful supply of good food, some wine or malt liquor, tonic medicines, and exercise in the open air, as means of cure in con-

nexion with the continuous humming murmur of veins. This continuous musical murmur is often of considerable value in guiding us in our diagnosis, and, as may be imagined, is in itself of no serious import.

Dr. Hope has analysed most successfully, and written most lucidly, on the import and diagnosis of the various abnormal murmurs of the heart. Following his excellent precepts, it is by no means difficult to assign their precise seats to every one of these encountered in practice, in the same way as we are enabled from its character, in the generality of instances, to indicate the nature of its cause. As a general rule, murmurs depending on implication of the semilunar valves are best heard immediately over these valves, viz. on the sternum opposite the inferior margin of the third rib, when the patient is laid horizontally; a little lower when he is erect, and thence for about two inches upwards along the courses of the aorta and pulmonary artery respectively. A distinct murmur heard high in the sternum, and in the track of the aorta, proceeds from implication of the aortic orifice or sigmoid valves; a murmur heard high up, in the track of the pulmonary artery, not extending into the carotids or subclavians, again, must be held to proceed from affection of the pulmo-arterial orifice and sigmoid valves; this murmur is also heard lower down, along the surface of the right ventricle, than aortic murmurs. Mitral and tricuspid murmurs, in the same way, are perceived with their highest degrees of intensity over and downwards from the seat of these valves, *i. e.* between the fourth and fifth ribs, and a little to the outside of the nipple in the male.

Of the Murmurs connected with the Aortic and Pulmonic Orifices and Sigmoid Valves in particular.

These murmurs take place at two different periods in the beat of the heart—along with the systole, or along with the diastole of the ventricles; they are therefore either *systolic and direct*, to use the language of Dr. Hope, or *diastolic and indirect*. When they are *systolic*, they accompany alteration of every kind and degree in the aortic and pulmonic orifices and their respective valves. Osseous, steatomatous,

and other kinds of disease and asperity of the great arterial trunks themselves, also induce every variety of blowing and sawing murmur, of the loudest and harshest description.

When the murmurs are *diastolic*, they are in the great majority of instances connected with regurgitation through the sigmoid valves, and accompany every pathological state which is sufficient to prevent the perfect action of these valves—disease of the valves themselves, or simple enlargement of the arterial orifices, the valves being healthy, but of course incapable of closing them. The diastolic or regurgitative murmur proceeding from imperfection of the aortic and pulmonic arterial valves is usually of the soft blowing or bellows kind. It is always weak when compared with the systolic murmur connected with the pathological states already indicated; it is generally prolonged, and has “a sucking or aspiring character.”

Both systolic and diastolic murmurs, from disease and imperfection of the aortic sigmoid valves, are frequent; they are comparatively rare in connexion with disease or imperfection of the pulmonic sigmoid valves; in other words, diseased states of the valves which guard the root of the aorta are much more frequent, and, when they occur, are much more extensive, than altered states of those which defend the root of the pulmonary artery.

Of the Murmurs connected with the Auriculo-ventricular Orifices, in particular.

These murmurs, like those that have just been considered, are either systolic or diastolic in reference to the ventricles; *i. e.* they occur either along with the contraction of the ventricles, or along with their relaxation. If they occur simultaneously with the contraction of the ventricles, they proceed from regurgitation through the auriculo-ventricular orifices; if they happen whilst the ventricles are relaxing, they are connected with an obstruction to the free entrance of the blood from the auricle into the ventricle. Systolic auriculo-ventricular murmurs are extremely common; diastolic auriculo-ventricular murmurs, on the contrary, are rare, although not quite so rare, perhaps, as was at one time supposed. M. Fauvel has but just directed the

attention of pathologists to this class of murmurs in an interesting paper (*Archives Gén. de Méd.* Jan. 1843.) In the course of the past year he had met with no fewer than five cases of murmur preceding the first sound, and possessing characters which left no doubt of its nature. A young man of 25, for example, was admitted into the Hôtel-Dieu affected with articular rheumatism. In the præcordial region, besides a strong impulse and considerable dulness, a loud rasping murmur was observed preceding the first sound, and having its maximum of intensity at the apex of the heart, and to the left. The patient by and by left the hospital, having recovered from his rheumatism. In three other cases the same phenomenon, slightly modified, was noted; and the patients who were the subject of observation here having died from the progress of the heart disease under which they laboured, contraction of the left auriculo-ventricular orifice was found after death in all. In one of the cases the contraction admitted the point of the forefinger; in one it would barely take in the point of the little finger. In three of the cases the valves closed the aperture accurately; in one they were insufficient for their office; so that here there was a second regurgitative systolic murmur in addition to the direct murmur which accompanied the contraction of the ventricle.

We are therefore to be on our guard in ascribing all diastolic murmurs to regurgitation through the semilunar aortic or pulmonic valves. Diastolic murmurs may and do occasionally arise from sonorous vibrations set up in the stream of blood forced by the auricle through a contracted orifice into the ventricle.

Every condition of the auriculo-ventricular orifices, or of their valves, which prevents them from being accurately closed at the moment of the systole, is competent to occasion systolic auriculo-ventricular regurgitative murmurs. The one condition connected with diastolic auriculo-ventricular murmurs hitherto discovered, is contraction of the corresponding aperture. The power of the auricles is generally too small, the extent of their contraction under ordinary circumstances is too limited, to cause the stream of blood flowing through them into the ventricle to acquire sonorous vibrations; but the

access to the ventricles being impeded, the auricles may be readily presumed to acquire such an increase of strength as enables them to project their successive charges of blood into the ventricles with such force as suffices to elicit sonorous vibrations. That all this is the fact, seems demonstrated by M. Fauvel's cases, just quoted.

Murmurs are found *ceteris paribus* to be louder in proportion as the stream of blood propelled through the diseased or defective orifice is stronger. The pitch or key in which murmurs are heard is somewhat raised by a stronger current, and depressed by a weaker one; but the pitch is more influenced by the *depth* at which the efficient cause of their production exists than by any other circumstance. Direct murmurs having their seat in the *orifice of the pulmonary artery* are therefore generally heard in a higher key than any others. Direct murmurs having their seat in the *aortic orifice* have usually a pitch about a third or a fourth lower. Diastolic or regurgitative murmurs having their seat in the pulmonic and aortic orifices, as effects of much weaker currents, are much softer in their character, and are also pitched considerably lower than those that are systolic.

The murmur of mitral regurgitation, or of regurgitation from the left ventricle back upon the left auricle, is generally loud when the depth of its seat is considered; but then it is excited by the whole force of the ventricular contraction. It is, nevertheless, heard in a key something like four tones lower than that in which the direct murmur of aortic and pulmo-arterial origin is conveyed to the ear. The murmur of *tricuspid* regurgitation is often heard of considerable intensity; its seat not being so deep as the corresponding murmur of the left side it is heard more distinctly, and in a somewhat higher key, than a mitral regurgitative murmur of like intensity. Regurgitative auriculo-ventricular murmurs are much more frequent occurrences in connexion with alterations of the mitral than of the tricuspid valves.

It may readily be conceived that the conditions which produce systolic and diastolic murmurs may exist simultaneously in the same subject. When this is the case we have of course a double or see-saw murmur. Murmurs that are very loud and distinct at one

period of a disease of the heart are apt to become feeble at a later period, and finally to cease from being appreciable at all. This is generally in consequence not of any diminution in the disease, but of increasing debility in the heart, which will soon cease to beat for ever.

[To be continued.]

SOME REMARKS
ON
A DIFFUSE FORM OF CARCINOMA
ATTENDED WITH CUTANEOUS
TUMORS.

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(For the *Medical Gazette*.)

SINCE the publication of Mr. Dorrington's carefully written paper "on a rare form of carcinoma*," I have been favoured with the particulars of the case to which he alludes, as occurring in the practice of Mr. Sumner, of Lymm, in Cheshire. These notes afford abundant evidence of the identity of the disease with the other instances adduced by Mr. Dorrington. Mr. Sumner states that the complaint occurred in a female of the name of Ann Aspey, an ostler's wife, residing at Hoo Green, near Knutsford. She was 56 years of age, had enjoyed a good state of health previous to her last illness, and was the mother of a large family: ten of her children have survived her. She mentioned that the first symptom of her indisposition was the appearance of small tumors, not larger than peas, in the right groin. These gradually increased in size until the period of her death, when they had attained the size of pullets' eggs, and were the largest tumors on the body. She had occasional pain in the tumors, which she complained of as inconveniencing her in her occupation, which was that of a nurse to lying-in women. On the 23d of March, 1839, she first consulted Mr. Sumner. At this time, in addition to the tumors already mentioned, others had made their appearance immediately under the skin, on the fore and back parts of the trunk, and especially about the mammæ. On taking hold of the mammæ, Mr. Sumner states that it gave the sensation of handling a bag of

* Published in the MED. GAZETTE, Feb. 4, 1842.

marbles. As the disease progressed, two more made their appearance on the neck, and afterwards under the scalp. Before death a few presented themselves on the extremities. In the beginning of the complaint there was but little uneasiness, but as the disease advanced the constitution manifestly suffered. The appetite failed, the bowels became constipated, and the secretions sparing. There was now considerable pain experienced on pressure being made over the epigastric region, and the food was rejected as soon as it was taken. The tongue had the appearance of raw meat. In this state she continued for a fortnight, being unable, during the ten days which immediately preceded dissolution, to take any nourishment, and even water was administered in very small quantities at a time. Various medicines had been administered with little or no mitigation of suffering, and she died on the 29th of April, 1839. Dr. Kendrick, of Warrington, visited her several times; and at his request Captain Jones, of Manchester, attended to take a drawing of the morbid appearances. On inspection after death the tumors were found to pervade the body. Besides their existence on the surface in the muscular and cellular tissues, they were found in clusters on the heart, and the peritoneum and folds of the mesentery were thickly studded with them. Preparations were made of the heart and inguinal tumors.

This very interesting case accords in all important points with Mr. Dorrington's case, and that which occurred to Mr. Yorke Wood, of Bury. In the last volume of the *Medico-Chirurgical Transactions* there is a paper contributed by Mr. Ancell, of London, which describes very minutely a case which I should conceive to be of the same nature. It is called the "History of a remarkable case of tumors developed on the head and face," &c. The patient, whose name was Frances Massinger, was about 52 years of age, of a dusky complexion, and short in stature. She was unmarried. The greater part of the scalp and head was loaded with tumors varying from the size of a pin's head to that of a horse-chestnut: a few tumors perfectly round in shape and of a violet hue were interspersed. Some of the tumors were sessile, and others appended by short thick peduncles. Tumors were

likewise found on other parts of the body. They sometimes itched, and considerable pain was excited by pinching them. The skin of the neck, face, and shoulders, had a remarkably tawny aspect, and was very coarse and rendered rough by numerous tubercles of various sizes. They were most thickly set about the nose, eyebrows, and ears. The roughness of the skin strongly resembled the delineations of elephantiasis. This patient had been a labouring woman, and she stated that the disease first made its appearance when she was about fourteen or fifteen years of age. The late Mr. Rose, of St. George's Hospital, had previously extirpated some of the tumors, and subsequently Mr. Bryant removed sixty at one sitting. They were all reproduced within twelve months. Mr. Ancell remarks that her family history is not a little curious, not only as respects the hereditary transmission of the disease, but from the fact that the females seem to be extraordinarily prolific. It seems that her grandmother was affected with similar growths on the head, her mother had a large one on the same locality, her younger sister had a mammary tumor extirpated, and another sister, aged 62, is afflicted with a large crop of tumors on the head. At the time when Frances Massinger applied to Mr. Ancell, there was an uneven tumor in the hypochondriac region, in which she had, at times, much pain. After the lapse of a short period ascites supervened. Subsequently the legs became anasarcous, ulcerated, and sphacelated; she became gradually exhausted, and died. Her death took place about twenty-one months after her first application.

On inspection, the peritoneum was found thickened and opaque, and containing myriads of tumors, many of them about the size of peas. The peritoneal surface of the diaphragm was thickened and studded with similar tumors. The more minute tumors were sessile, but the larger "all tended to become pendulous." Tumors were also found in the omentum and mesentery. A very large mass, perhaps weighing two pounds, was found attached to the anterior surface of the liver, and in a manner suspended from it. On a section of the large tumor, it presented a cancerous appearance, with distinct fibrous

radii proceeding from the centre: the cut surfaces had a greenish-yellow tint. A considerable quantity of fluid was found in the ventricles of the brain, and a tumor or two were met with in the substance of the uterus. For further particulars of this case I must refer the reader to Mr. Ancell's own elaborate account, affixed to which will be found two accurate drawings of the disease, which Mr. Ancell submitted to the society.

I think from these particulars it will be evident that the case of Francis Massinger is of the same kind as that of Ann Aspey, and also identical with the cases which I had an opportunity of seeing in this neighbourhood, through the kindness of Mr. Dorrington and Mr. Wood. The points of difference which exist perhaps only serve to invest the subject with additional interest. In all these instances the carcinomatous character of the complaint appears to have been clearly ascertained, or, at any rate, that the complaint came under the designation of encephaloid disease. Many of the professional gentlemen who witnessed the inspection of Mr. Ancell's case were struck with its malignant character, and the terms scirrhus, fungoid growth, encephaloid in a crude state, &c. were bestowed on the internal disease. The tendency to ecchymosis, which was so manifest in Mr. Dorrington's and Mr. Wood's cases, does not appear to have been observed in those of Mr. Ancell and Mr. Sumner. Another peculiarity in the case of Frances Massinger was the mollusciform character of the cutaneous tumors. Many of the tumors were pendulous, and most of the smaller "manifestly follicular elevations, such as accompany other cutaneous diseases," and exuding, on pressure, a white substance similar to curdled milk. The resemblance to elephantiasis in the tawny and rough state of the skin, which I do not believe existed in the other cases, is likewise noticed by Mr. Ancell. In the remarks accompanying Mr. Dorrington's case he endeavours to distinguish the disease from molluscum by pointing to the sessile character of the tumors; but such a mode of discrimination obviously cannot hold good since the publication of Mr. Ancell's case. I think it must be admitted, that there is great difficulty in defining the limits of this dis-

ease, and indeed reason to suppose that it does not acknowledge any precise definition. In the instances we have before us there appears to me abundant evidence of this in the approximation to molluscum, cancer, fungus, elephantiasis, and melanosis. In Mr. Wardrop's edition of that still valuable work, Baillie's *Morbid Anatomy*, he prefaces the second volume with some preliminary observations on diseased structures, and he concludes with some remarks on the compounds which may occur. "Though it cannot," says he, "be doubted that scirrhus, serofula, and fungus hæmatodes, have each a distinct character, yet it is of importance to be aware that several of these diseased structures may exist *at the same time in the same organ.*" * * "In all tumors it is not only difficult but impossible to describe the various modifications which result from the combination of scirrhus, fungus hæmatodes, and serofula, with one another, and with other morbid alterations of structure. The characters of different tumors are drawn from cases where one disease has alone existed, for, like colours, those that are primary are easily distinguished, yet language cannot describe their various and almost infinite combinations; therefore it is only in their unmixed state that we can learn to distinguish each morbid structure; their various complications must be afterwards discriminated" (p. 49). These remarks, however, were never intended to make us content with general assertions, and it is always right to push our definitions as far as they can be fairly and legitimately carried. It is unquestionable that cancer, melanosis, and encephaloid disease, have many characters in common, and are occasionally found in combination, and it is not perhaps going too far to say that any of the more complex associations can always be defined in a regular manner. We see melanosis occurring in small tumors in the skin, at the same time that it affects the internal organs, just in the manner of the diffuse carcinoma we have been describing. We see carcinoma in union with molluscum (mollusciform cancer), and again, melanosis and cancer in combination. Some affections may partake more of one of these forms of disease than another, and it is not possible, therefore, to be very circumscribed in our notions; at the same

time, the leading features of the complaint in all are sufficiently distinctive to call for a general denomination. A cutaneous complication, approaching elephantiasis, is probably an aggravated state of a condition of the skin to which many of these diseases point. Abundant evidence of the truth of these observations might, I think, be collected from Rayer's very complete work on the Diseases of the Skin, but it would only swell out the paper to an inconvenient length to enter into an analysis of all that bears on the subject. I cannot, however, pass over in silence a very interesting instance of melanosis which resembles very closely the disease under consideration, except that melœnic matter is substituted for the carcinomatous deposit. A. Gautier, a cook, aged 59, became a patient of the Hôpital St. Louis, Aug. 27, 1816. She had a great number of black tumors on the thorax, breasts, abdomen, and some few on the arms and thighs. The patient was in an extreme state of debility. The appetite failed, she vomited her food, lost her sleep, and soon became the subject of general œdema; the pulse became soft and compressible, and she died on the 25th of September. On examination after death, numerous tumors of the same description were found on the subcutaneous cellular tissue, and more sparingly on the extremities. The cellular substance which surrounds the blood-vessels, nerves, and lymphatic glands, was literally loaded with them. They were found in the substance of the thyroid gland, some on the lungs, in the mediastinum, and under the costal pleuræ; the duplicatures of the epiploa and mesentery were *crammed* with them. None of the abdominal organs were free from them*. Other cases of a like kind are on record. One instance is mentioned of a lady, who died of a similar affection, in whom the melœnic deposits were mixed with cerebriform matter†. The reader who feels an interest in the subject will do well to consult the excellent work from which these are taken. Many more examples might be adduced, but it is useless. M. Velpeau has published a remarkable instance of the encephaloid form of the affection, which might be well com-

pared with the melœnic variety. Suffice it to say, the viscera were full of tumors, and they were also found under the skin.

But to return to the cases which have recently occurred, and which have suggested these observations: we may notice that the external tumors preceded, for some time, the advances of the complaint, and in three of them a chronic enlargement of the lymphatic glands was the first indication of the disorder. This enlargement remained for a long while stationary: when the constitution broke up, other tumors appeared, and the patients were speedily carried off. In Mr. Ancell's case the tumors had existed many years, and did not seem to produce any disturbance; and in some branches of the family, who were also affected with tumors, they were likewise innocent. In all his cases the extremities had but few tumors. It is to be hoped that Mr. Ancell will make further inquiries respecting the relatives of his patient.

QUERIES RESPECTING CLIMATE,
&c.

To the Editor of the Medical Gazette.

SIR,

FOR the purpose of eliciting from the profession a store of information which might constitute a complete Medico-Topographical History of England, and which, if extended to other countries, would form a comprehensive work on Climate, I have addressed to a few practitioners in provincial towns the following catena of queries, which I have asked the favour of them to answer; engaging to insert the remarks upon the climate of each locality or district, with the name of the contributor as my authority.

I have fitted up such a form as a specimen, which I send for insertion, that it may operate as an inducement to those members of the profession whom I have addressed to comply with the request contained in the circular which accompanied the form.

I am, sir,
Your obedient servant,
J. PIDDUCK.

Great Russell Street.
Feb. 7, 1843.

* Rayer, p. 1020; being a quotation from Lacnec, Auscult. Med. 2ème édit. t. ii. p. 38.
† Rayer, p. 1022.

"Differre quoque, pro natura locorum, genera medicinae."

Queries.	Climate of the Rookery, St. Giles's District.	Answers.
I. <i>Air</i>	Free and open, or close and confined by trees and hills.	Close and confined in courts and alleys.
<i>a. Dryness</i> . .	Annual extremes and mean; or, if no register be kept, judging by walls of houses in doors, dry or damp.	The upper parts of houses dry; cellars damp.
<i>b. Dampness</i> . .		
<i>c. Temperature</i> .	Annual extremes and mean; or, if no register be kept, judging by the sensations, warm or cold.	Temperature of the rooms warm, from the numbers congregated together.
II. <i>Water</i>	Supplied by springs, wells, above or below 33 feet deep, rivers, rivulets, ponds, or ditches.	From the New River; and hot water from the large brewery.
<i>a. Softness</i> . .	Tincture of Soap, soluble.	Soap soluble, after water has been boiled.
<i>b. Hardness</i> . .	Muriates, Sulphates, Carbonates, Chalybeate.	Super-carbonate of lime, and chloride of sodium.
<i>c. Purity</i> . . .	Clean or turbid, from animal or vegetable decomposition.	Slightly turbid, till deposit takes place.
III. <i>Locality</i>	Elevated, or nearly level with the sea. Aspect, east, west, north, south.	Streets run east, west, north, and south.
<i>a. Soil (1 Sub)</i> .	Sandstone, Limestone, Chalk, Gravel, Marl, Sand.	Gravel.
" (2 Super)	Clay, gravelly clay, sand, sandy clay, loam, gravelly loam, sandy loam, chalk, alluvial.	Brick-rubbish.
<i>b. Drainage</i> . .	Perfect, by running water, or covered shores; imperfect, by cesspools, open ditches, or pools.	Imperfect by street gutters.
<i>c. Produce</i> . .	Pasture, arable, woodlands, oak, elm, ash, fir indigenous.	Covered by buildings.
IV. <i>Occupation of the People</i>	Agricultural, manufacturing, trading, seafaring, noting manufactures carried on, and the mines worked.	Bricklayers' labourers, market women, hawkers, thieves, and vagabonds.
V. <i>Diet of the People</i>	Animal, Milk, Fish, Vegetable, or chiefly vegetable, spirits, beer, cyder, tea, coffee, opium, or capsules of poppy, used in brewing.	Salt meat, fish, vegetables. Spirits, beer, tea, and coffee.
VI. <i>Diseases</i>	1. Chiefly <i>inflammatory</i> , requiring depletion by bleeding, &c., noting hydrocephalus and croup in children, and pleurisy.	Scarcely ever inflammatory; hydrocephalus common; croup rare.
	2. Chiefly <i>congestive</i> , requiring deobstruents, as emetics, cathartics, noting dyspeptic and bilious complaints, and bronchitis.	Almost entirely congestive; these constitute the indigenous diseases.
	3. Of <i>debility</i> , requiring stimulants and tonics, as wine, quinine, &c.	Owing to gastric irritation stimulants and tonics are rarely admissible.
Fevers	Type of, most frequently epidemic.	Bilious, typhoid, petechial.
Chronic	1. Of <i>Head</i> , noting Insanity, Idiocy.	Vertigo, from inanition, frequent; and cephalæa.
	2. Of <i>Chest</i> , noting tuberculous and Heart Disease.	Both common.
	4. Of <i>Abdomen</i> , noting hepatic and nephritic diseases; including calculous complaints.	Hepatic and nephritic disease common; calculous complaints rare.
	4. Of the <i>Glandular System</i> , noting scrofula.	Scrofula and glandular disease rare.
	5. Of the <i>Skin</i> , noting porrigo, psoriasis, impetigo, lepra.	Every form of cutaneous disease common, and frequently epidemic.

GENERAL REMARKS.—In consequence of the poor diet and demoralized habits of the people, the imperfect drainage, and the close confined air of the streets, courts, and alleys of this district, the degree of health is low; hence the inhabitants are almost exclusively liable to diseases of the asthenic class. During 15 years' crowded attendance at the St. Giles's N.E. District Dispensary, I cannot call to mind any instance of venesection being necessary; *i. e.* among the permanent residents. On new-comers having been bled, their diseases have rapidly passed from the sthenic to the asthenic class. At first, on taking charge of the dispensary in this district, I was surprised, when I had ordered leeches, by frequently hearing that they had dropped off dead almost immediately they were applied, notwithstanding I had given particular directions that the surface should be well washed with warm water, and that the leeches should not be handled. Struck by the frequency of the occurrence, I directed a few ounces of blood to be drawn from the arm of half a dozen patients suffering under congestive diseases. The effect in every case was injurious. As to the blood itself, the clot in one basin was very small, much cupped, and nearly globular; in the other basins the clot was loose in texture, dark in colour, and small in proportion to the serum. The serum exhibited every colour, red, green, yellow, and exhaled a nauseous odour. It was to this morbid condition of the blood that its poisonous effect on the leeches might be ascribed; and the same reason may be assigned for their comparative freedom from vermin, notwithstanding the dense inhabitancy and total neglect of personal cleanliness. Living in the constant inhalation of malaria, the instinctive desire for ardent spirits and tobacco, to relieve its depressing influence upon the nervous and vascular system, is almost irresistible. Stimulants are thus resorted to as a temporary relief to the malaise produced by malaria. The order of frequency of disease in this district is—in summer and autumn abdominal, in winter and spring thoracic, in spring and summer cephalic, in autumn and winter cutaneous. Cutaneous diseases, and even psora, are frequently epidemic; fevers, typhoid and malignant, are commonly rife in cold and damp weather, *i. e.* when the streets remain wet for

many days, notwithstanding little or no rain has fallen: heavy rains followed by a drying up of the streets dissipates these forms of fever. Temperature appears to influence them slightly, compared with moisture. The pestilential cholera, in both its visitations, the one in July, the other in November, and the petechial fever, three years ago, and now again rife in the district, was consonant with the same wet condition of the streets, which may be regarded as the pestilential hygrometer. The neuralgic form of rheumatism is of very frequent occurrence. In its acute stage, purgatives and antimonials, with the acetate of ammonia, suffice for its removal. Chronic neuralgia yields more certainly to minute doses of strychnia than to carbonate of iron, or quinine. Owing to the almost universal presence of gastro-enteritis, tonics and stimulants, with the exception of carbonate of ammonia, are inadmissible. In times of comparative scarcity of work, the *head-ache of inanition* is prevalent: the symptoms are intense pain in the head, vertigo, staggering gait, a clear glossy eye, a flushed cheek, a hollow voice, and the breath cold, and smelling like raw meat. A basin of soup is the only remedy. Ulcers on the legs are also of very frequent occurrence, and in many instances they are of a rheumatic character. The patients have been the subjects of rheumatism previously to the ulceration; the pain in the ulcers is, as it were, of the bone, and the cure is effected by those remedies which are most frequently successful in cases of chronic rheumatism; among which the vapour bath is one of the most effectual in alleviating the pain and disposing the ulcers to heal. Cases of pseudo-syphilitic disease in infants often occur. The mothers are affected with secondary symptoms, which appear after the birth of the children, by whom they appear to have been infected. The disease is generally traceable to the fathers, who have formerly suffered from syphilis, although the symptoms may have vanished. In some instances three or four children have been born in succession, either dead, or they have died of pseudo-syphilis soon after birth, without either parent evincing any sign of the disease. Is not this fact in favour of the popular notion that syphilis may and does exist in the blood; and that it is transmissible from parent to offspring independently of contact?

ON THE
SUPPOSED INFLUENCE OF THE
MOON'S RAYS AS A CAUSE OF
DISEASE IN TROPICAL
CLIMATES.

By GEORGE THOMPSON,

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formerly Surgeon to the H.E.I.C. Marine Sur-
vey Department on the Bengal Establishment.

(*For the Medical Gazette.*)

THE various complaints, more especially those of a paralytic nature, which occur at sea in tropical climates, in consequence of sleeping in situations exposed to the rays of the moon, are commonly attributed, by seafaring men, and also by many members of the profession with whom I have conversed on the subject, to some inherent noxious quality in the rays of the moon, which, impinging upon the body, produce disease therein; and in support of this opinion it is generally alleged, and with truth, that dead animal matters exposed to the rays of the moon become much sooner putrescent than when they are covered up or otherwise shaded. And it is maintained that, consequently, if dead matters are so influenced, living bodies must suffer from exposure to the same cause. Within the tropics it occasionally happens that seamen who have passed the night sleeping on deck, uncovered, with the exception of their body-clothes, and in a position exposed to the moon's rays, find themselves, on awaking, either blind, or paralysed in some part of the body, or affected with symptoms of congestion in some of the internal organs, and the cause invariably assigned for all these complaints is the noxious influence of the moon's rays. Instances of very young healthy animals dying during the night from exposure to the moon's influence are also brought forward in support of this doctrine. But I apprehend that all these circumstances, viz. the quick putrefaction of dead matters, the complaints induced in the living, and the death of young animals, take place not from any noxious quality in the rays of the moon, but from the condition of the sky as regards the presence or absence of clouds during the moonlight. During full moon, or when the moon is near the full, and the sky clear and but little clouded, as it most frequently is during a great portion of

the year, radiation of heat commences immediately after sunset, and goes on rapidly from the earth's surface, and from all bodies exposed to the clear sky, and a deposition of dew speedily ensues in consequence of their temperature falling by radiation below that of the superincumbent air. Now the two circumstances necessary for the putrefactive process going on being heat and moisture, and as the heat within the tropics seldom falls, during a great part of the year, below that necessary to support the process of putrefaction, it must happen that putrescence will go on rapidly when aided by moisture generated in the manner described above. The rapid putrefaction of animal matters, however, is always retarded by the presence of clouds, or any other body which screens them from the clear sky, for by these means the heat is again reflected upon the radiating body; and a continual repercussion of caloric being kept up, the animal matters are retained at a uniform temperature with the surrounding atmosphere, and no dew or moisture is generated upon their surfaces by which putrescence might be quickened.

As regards the various complaints arising in seamen, and others, who sleep in the open air exposed to the moon's rays, I believe them to be produced by the same causes which are productive of the changes taking place in dead animal matters. An individual when lying upon the deck, or upon an open plain, with no other canopy than the mere vault of heaven, and exposed to the full moon in a cloudless sky, loses heat by radiation rapidly, and consequently his body becomes gradually cooled down until either the whole or some particular part arrives at so low a temperature that the healthy functions cannot go on, and pathological changes take place, either generally or locally, in the vascular or nervous systems, and hence the blindness, the paralytic affections of, and congestions of blood in, various parts of the body.

Young animals exposed in a similar manner must suffer from the rapid loss of animal heat, the preservation of which is so essential to the continuance of life, and the loss of which is incompatible with those actions and changes which go on in the system, whereby life is maintained. In the Indian seas

the Lascars, or native seamen, seem to be well aware of the bad effects of sleeping in exposed situations, for I always observed that they endeavoured to obtain the shade of the bulwarks, boats, or awnings, and when unable to obtain these they took the precaution of wrapping themselves well up in their blankets, and this they did as well during the north-east monsoon, when no rain falls, as during the south-west, which is always attended with heavy rains, and violent storms of thunder and lightning.

Having mentioned the monsoons, I may observe the singular amount of health which is enjoyed during the north-east monsoon in localities which, all other circumstances considered, might be looked upon as well fitted for the promotion of disease. While in medical charge of the surveying vessels employed in examining the sea-fare of the Soonderhunds on the Bengal coast, the healthy condition of the different crews was very remarkable. The number of men, natives and Europeans, employed, amounted to 180; and the vessels, during a period of five months, from the middle of October till the middle of March, were seldom more than seven or eight miles from the shores of the Soonderhunds, an inhospitable wilderness of jungle, several hundred square miles in extent, and intersected in all directions with marshes, rivers, creeks, and lakes, and teeming with insect, animal, and vegetable life. The emanations from such a place as this, under the influence of a tropical sun, have always been considered a fertile cause of disease.

During the above-mentioned five months, the wind blew steadily off shore, of course carrying along with it whatever miasmata was generated in the jungles, and to the full influence of which the men were constantly exposed; yet the following table contains the whole amount of disease which occurred among the 180 men employed:—

	Cases.	Native.	European.
Acute rheumatism	4.	3	1
Ague . . .	6.	5	1
Diarrhœa . .	1.	} Both natives.	
Corneitis . .	4.		

All the cases were slight, with the exception of those of corneitis, which were very severe, and which arose from

the glare of the sun reflected from the sea during calms. No deaths took place, and all the complaints terminated favourably.

CASE OF THE LATE MR. RICHARD CARLILE.

By DR. THOMAS WILLIAMS,

Of St. Thomas's Hospital.

(For the London Medical Gazette.)

APART from the intrinsic interest which attaches in a medical sense to the facts determined by the opportunity afforded, at his own desire, of examining his body after death, the case of the late Mr. Carlile has excited sufficient public curiosity to render proper the step of presenting his friends and the public with a succinct and authentic statement of the particulars, as determined by the inspection of his body, which it was my duty to conduct. Nor would the history of his life be complete without an open acknowledgment on the part of those really desirous to extend by every legitimate means the practical usefulness of medical science, of the substantial benefit which a public example like his is calculated to confer. His anxious and repeatedly avowed wishes were that every use should be made of his remains in the elucidation and furtherance of science; and in contribution to the availability and certainty of the resources which medical science can now command to mitigate, where it fails completely to dispossess of its sting, the severity of human suffering. It would certainly be but a partial execution of these wishes if the obligation and benefit which the bequest of Mr. Carlile is so eminently fitted to produce, alike to the public and the profession, were circumscribed and forgotten within the walls of the limited abode to which his body was consigned. It is neither my desire nor province to appear as the analyst of his peculiar sentiments on the subjects of science and religion. My desire is to facilitate the execution of wishes which dictated a magnanimous although eccentric bequest.

I have endeavoured with as much accuracy as possible to collect from the most authentic and trustworthy sources all the facts relating to his latter history, but as the post-mortem examination

was made and recorded in detail on the register of the hospital, without any information of a certain character in reference to the nature of his illness, it may be received as quite uninfluenced by the *bias* with which a previous knowledge of the case sometimes affects and regulates the interpretations which appearances after death may appear to warrant.

In general formation the body was distinguished by all the marks of robustness and strength. The chest was broad and well developed; the features, and contour of the face, were quite symmetrical. In figure, the head, if viewed in profile, approximated, although not very closely, to the form which is characteristic of the crania of the American variety of mankind. The anterior segment gradually receded, the plane of this uniform recession terminating in an elevated vertex or summit, which occupied a position posterior to a line drawn transversely over the head, from one parietal prominence to the other. In this particular, with respect to the configuration of the head, different families of the human race, and, equally as obvious, individuals of the same nation and family, present very numerous varieties. The vertex or summit of the cranial *arch* offers as many variations in size as position. In the Hindoo the highest point is placed directly over the parietal prominences. This circumstance, if the plane of the forehead be uniform, while it gives the character of gradual inclination backwards, leaves capacious room for the development of the anterior segment of the brain. In the North American Indian, the vertex (I use this word to denote the *apex* of the cranial cone, wherever it may be placed), is quite over the occipital region; the frontal recession more rapid, the facial angle consequently more acute. In the Peruvian, it coincides with the middle point of the coronal suture. In the Patagonian, it is placed considerably *anterior* to this suture. In these two instances the forehead acquires the character of great elevation and expanse. In the crania of the Greeks and Egyptians, a vertical rise is observed in the lower part of the forehead from which the line coinciding with the summit proceeds with semicircular uniformity as far as the point of the occipital promi-

nence. This figure produces always the ideas of high intellectual development. Varieties equally marked in the form of the head are constantly observed in individuals, without any demonstrable variations in the endowments of the mind. While in mere configuration the head of Mr. Carlile did not attain the standard of perfection which European taste has assigned for the determination of the highest mental excellence, it may be proved by example that the *form* of his head was compatible with the possession of great intellectual prowess: while, however, the facial angle was somewhat below the average European standard, the line carried from one temporal ridge to the opposite exceeded that in length which common observation recognises as the average; in volume the forehead gained *transversely* the development which it failed to attain *vertically*. Imagining a line dividing vertically and transversely the cranium, the posterior presented a greater comparative volume than the anterior segment. The circular admeasurement of the head, as found by a line carried horizontally over the superciliary ridges, and bounding the occiput at the level of the tuberosity, gave $23\frac{1}{2}$ inches; the vertical, as obtained by a line carried from the tragus of one ear, to that of the opposite afforded $13\frac{1}{4}$ inches. The former somewhat exceeded the mean measurement of the European head, while the latter was not more than equal to the standard. Some of these facts were first furnished me by my friend Mr. Dixon.

The countenance acquired breadth and squareness from the prominence of the cheeks. The general expression of the countenance conveyed strikingly the idea of resoluteness and firmness; but withal it was pleasing.

The brain, including the cerebellum, pons, and a portion of the medulla; amounted in weight to 3lbs. 6 $\frac{3}{4}$ 25. The cerebellum, separated from the pons varolii, weighed 5 $\frac{3}{4}$ 53. In proportional value these weights are in the ratio of 1 to 9 $\frac{1}{2}$. This proves a somewhat greater relative development of the *cerebrum* than ordinary. The average I believe is as 1 to 8 in the weights of the *cerebrum* and *cerebellum*. The membranes of the brain were quite healthy; the grey matter, or hemispherical ganglion, was healthy in

structure and colour; but in the opinion of Mr. Solly the grey matter does not exceed the average depth. No other morbid condition could be found in the brain than that of a minute apoplectic cavity in the substance of the tuber annulare. This was situated on the *right* of the median line, and superior or posterior to the transverse median plane of the pons; it contained a small quantity of reddish pus-like fluid, appearing as disintegrated cerebral matter. The capacity of this little cell did not exceed the volume of a small pea. The structure immediately adjacent indicated only slight marks of softening. The existence of an adventitious membrane, or cyst to this cavity, could not be decidedly proved. It is the most probable supposition in regard to its formation, that it was produced by a minute apoplectic clot, subsequently disappearing under the agency of absorption, more or less augmented in dimensions by the softening and degeneration of the adjacent structure. From the situation of the cavity, with reference to the columns transversing the pons, it was obvious that the continuity of the posterior pyramids, or *sensient portion* of the *crura cerebri*, was chiefly broken down: since the cavity existed on the *right* of the median plane of the pons, and above the decussation of the columns, the paralysis must have affected the left side of the body, and probably sensation to a greater extent than motion.

The heart, with the roots of the large vessels attached, weighed $13\frac{1}{3}$. The normal weight of this organ in the adult is given by physiologists at about 93. In general volume also the heart had augmented; the cavities of the two ventricles had somewhat enlarged, the left more obviously than the right; the ventricular parietes on the left side were slightly hypertrophied. The mitral and tricuspid valves were quite healthy; the aortic likewise, with the exception of a little deposit and thickening around the attached border of one of the curtains. A slight dilatation appeared in the ascending portion of the aortic arch; frequent atheromatous patches were observed underneath the lining membrane. These deposits were found also in the coats of the iliac vessels. The heart was covered with a considerable quantity of fat, a cir-

cumstance which should not be overlooked in estimating its augmented weight and volume, as evidences of a pathological state.

No satisfactory indications of disease could be detected in the lungs. The right was universally adherent to the costal pleura. The adhesions were obviously of old formation. The *base* of the lung also was attached to the diaphragm. The parenchyma of the lung immediately subjacent to the pleura presented no decided proofs of ever having been once involved in the neighbouring inflammation. The lining membrane of the bronchial tubes on this side was congested to a slight degree; a little dilatation of the channels in some places, in others thickening of the lining membrane, were observed. The small divisions only contained the product of bronchitis; this, however, was small in quantity. No proofs could be discovered of the existence of pneumonic consolidation; for although the lung was somewhat congested, it was different from that description of congestion which constitutes the first stage of pneumonia. There was some impediment offered to the escape of air from the air vesicles, for the collapse of the lung was less complete than that which is observed to occur under the conditions of health. On the left side no pleural adhesions existed. In structure the lung was healthy, but the bronchial tubes presented nearly the same appearances as those described on the right.

All the organs of the abdomen were found in a perfectly healthy state.

As formerly stated, the facts thus determined by the examination of the body at a period of four days after death were recorded without any previous knowledge of the case. It will be now seen what correspondence there is between the conditions which the inspection of the body has enabled us to discover, and the signs by which those conditions were rendered manifest in the living state. I can hold myself responsible for the correctness of the following facts in relation to the history of his health during the last eight or nine years. Care has been taken to gather them from his own immediate friends.

For a period of nearly ten years before his death, the late Mr. Carlile laboured under a peculiar form of

asthma; it was marked particularly by attacks or paroxysms of more or less extreme difficulty of breathing: during these attacks the most prominent sensations were those of great pressure and tightness across the chest. These paroxysms did not terminate in copious expectorations, as in the examples of the "humid" forms of asthmatic affections. His difficulty of breathing suffered almost immediate and excessive aggravation even by a stay of a few days' duration at his residence in Fleet Street, so that for some years he was compelled to return into the country for his nightly rest. Breathing thus for a portion only of the twenty-four hours the less salubrious atmosphere of his town residence, he succeeded in alleviating to a great extent the continued oppression and distress of breathing which his complaint would otherwise have inevitably produced. His habits were temperate and regular. He never referred any uneasiness to the region of the heart. He was not subject to palpitation or fainting: while breathing the country air he felt almost entirely free from all restraint of breathing. During the paroxysms which came on in the city, his exertions for breath frequently became distressing, and his countenance was thrown into the livid anxious condition which so peculiarly belongs to the paroxysm of asthmatic oppression.

In the year 1841, he became the subject of a singular attack of paralysis. One evening, after rather severe exertion in walking, he found that the power and sensibility of the left side of the body were being gradually lost, or, as he expressed it to one of his family at the time, "all the life of the left side of his body appeared to be flowing in the most strange way to the right." In a short time the paralysis was complete. It is most important and interesting to recollect that during the whole progress and development of the seizure his mind stood undisturbed; a conscious witness to the approach of that singular and mysterious change by which the extremest commands of volition, the proud mandates of the mind, were being dispossessed of their power to excite to respondent agency the formerly obedient hand. He conversed freely and as intelligently as ever with his attendants. After the lapse of some time, he recovered to a great

extent the power of voluntary motion and sensation. The loss of sensibility was more complete in the face than in the remaining parts of the affected side. The return of sensation in the left side of the face was slower and less complete than in other parts. He died in one of his usual attacks of asthma at his house in Fleet Street. It came on suddenly, and too rapidly to render it safe or practicable to remove him to his country residence. It is believed that if his removal to the country had been early and promptly made he would have survived with his usual impunity the effects of his last attack.

In the history of the paralytic attacks with which the late Mr. Carlile was afflicted, in their physiological references, there are several points of no uninteresting character. It is a rare occurrence to discover a spontaneous extravasation of blood in the pons varolii. According to the statistical records of Andral, out of 392 cases of cerebral hæmorrhage, 9 only of effusion into the tuber annulare were found. The original attack in the case of Mr. Carlile was accompanied by no convulsions, no extinction of mental consciousness. The question may be raised, could the physiologist have predicated the situation in the brain at which the rupture and extravasation had occurred? Are the cases of apoplectic effusion into the substance of the pons *always* characterised and distinguishable by an absence of stertor and coma? It is quite certain that, under the circumstances of extravasation within the limits of the cranial cavity, whatever the situation in which it occurs, the phenomena are dependent upon, and referrible to, the *pressure* which the general mass of the brain sustains. This pressure must oppress almost equally every part of the organ, and may be explained and understood on the principle of hydrostatic diffusion. In the case of Mr. Carlile, it may be therefore correctly argued that the undisturbed presence of consciousness was due only to the minuteness of the vessel ruptured, and therefore of the quantity of blood effused. It is quite easy to understand, from the immediate proximity of the spinal centre in cases of this character to the seat of extravasation, that under the conditions of a bulky and serous effusion, the cord would suffer under the pressure, and convulsions, with

other spinal phenomena, would form the most prominent signs. It is therefore the limited extent, rather than the seat of the effusion, which explains the peculiarities of Mr. Carlile's attack. The slight softening of structure adjacent to the cyst in this is calculated, likewise, to suggest some few reflections of interest. In all cases of cerebral hemorrhage, from the close box-like limits of the cranium, it is obvious that the pressure of a clot must operate equally in every direction, and that consequently it must compress every part of the enclosed mass with as much severity as the portions in the immediate neighbourhood to the extravasation; and yet the disintegrating process affects only the parts in direct contact with the clot. It is to this process of softening and breaking down that the mind, in all apoplectic cases, owes its disenthralment from the extinguishing pressure of the clot. It is thus that the total volume of the mass is diminished, and the aggregate brain allowed to recover its normal density. In the case of Mr. Carlile, as already remarked, the cyst, and formerly the clot, was situated in the sentient segment of the pons, in the substance of the posterior pyramid, and at the distance of about an inch and a half from the locality to which the sentient root of the trigeminus has been anatomically followed. If induction from physiological facts be allowed, it is not improbable that the slowness with which the restoration of sensation occurred in the face, comparatively with the period of its return in other parts, was dependent upon the extent to which the very point of origin of the fifth nerve was involved in the pressure. In a case of this description, if the clot had extended in its bulk beyond the median line of the pons, the singular pathological experiment would have been performed by which a complete separation would have been accomplished between the sentient apparatus of the cerebrum and that of the cerebellum. Even under the partial isolation of the cerebellum, which happened in the case of Mr. Carlile, a competent physiologist, if confident in the accuracy of his diagnosis, might have elicited facts of no inferior value and interest to the physician.

In conclusion, it is by no means desirable to withhold the remark, that in contemplating the instructive facts

which this imperfect analysis of Mr. Carlile's case has developed, it must be a source of compensating gratification to those whose feelings and affections his stern and philosophic bequest was most likely to violate and appal, to find, apart from the advantages which may accrue to medical science from an example thus magnanimously shown of indifference to the over-wrought delicacy of popular taste, that his own individual case has accomplished something towards the spread of useful knowledge.

EXTIRPATION OF A TUMOR INVOLVING THE PAROTID GLAND.

BY BENJAMIN TRAVERS, JUN.

Resident Assistant-Surgeon at St. Thomas's Hospital.

(For the London Medical Gazette.)

On the 21st of December last I was called upon to remove a large tumor from the side of the face of a married lady in her 29th year, of a leuco-phlegmatic aspect, subject to occasional menorrhagia, dyspeptic, and often ailing, but not apparently strumous. The tumor occupied the parotid space, extending downward into the neck, below and behind the angle of the jaw, and upwards in the direction of the lobe of the ear, which was much raised and projected by its increase. It was flat though prominent, having a smooth surface, generally moveable, but somewhat adherent at the neck, and towards the angle of the jaw.

It was not painful, but perceptibly on the increase, so that deglutition was at times impeded. This tumor had existed twelve months, and, so far as the patient knows, its origin was strictly spontaneous. Mr. Travers was consulted, and the operation had his sanction and superintendence.

The patient was placed in the sitting posture, and the incision extended from behind the ear downwards and forwards towards the angle of the jaw, below and behind which it terminated, a full inch distant from that process. The first stage of the dissection was quickly completed, leaving the superficial investment of the parotid gland exposed in all directions. I then began to raise the growth carefully from before backwards, dividing freely the

stylo-maxillary insertion of the fascia, and laying bare the fibres of the masseter muscle. In cutting the fascia an artery was wounded, and secured by ligature. The mass was now much loosened, and protruded considerably, discovering its bulk to be far greater, and its remaining connexions firmer, than was at first suspected. Up to this point nothing had appeared but the healthy though expanded texture of the parotid. On recommencing the dissection on the under side of the growth, there followed upon a slight touch of the knife a sudden protrusion of an apparently steatomatous mass, shelling out from a membranous capsule, and exceeding two inches in its greatest diameter. This was pulled away with the fingers. The collapsed cyst, and the superincumbent gland to which it belonged, remained to be removed. This dissection was the most hazardous and difficult part of the operation, for the pulsations of the carotid artery were clearly visible in the bed of the wound, which was now of considerable depth, and bleeding freely. Much was effected by forcible laceration, aided occasionally by delicate touches with the point of the knife. In this manner the operation was completed. Just before its close a considerable artery was divided near the neck of the jaw. This was secured with some difficulty. I believe it to have been the transversalis faciei, very near its origin.

The following parts were all exposed and visible. The neck of the lower jaw; the whole of its vertical ramus, inclusive of the angle; the masseter muscle in part; the mastoid process, and attachment of the sterno-mastoid muscle. The place of the external carotid was marked by the presence of strong pulsation; but I do not affirm that the proper external coat of the vessel was seen. Its sheath, I believe, formed the boundary of the gap in that direction. The patient was much exhausted by the operation, which lasted about twenty-five minutes. As soon as the circulation had recovered a full opiate was given, which procured repose rather than much sleep. It is unnecessary to dwell upon the after-management of the case. Hæmorrhage supervened at midnight, owing to the parting of a ligature. The skin was distended by soft clots,

which were passing through the wound for many days, being aided in their escape by a poultice. Union progressed rapidly under plaster and a light compress, confined by a roller carried over the vertex and occiput. The last ligature separated kindly within the first fortnight, and there now remains nothing but a linear cicatrix, interrupted by a small chink, through which a little saliva distils during mastication.

There is another consequence of these operations to which this case offers, for the present, no exception, viz. a partial paralysis of the side of the face. The angle of the mouth droops, and the upper eyelid closes imperfectly. Sensation has, on the contrary, been morbidly excited, and the integuments were, for a time, sore and swollen. An inspection of the gland, which is now in the museum of St. Thomas's Hospital, explains the cause of these symptoms. The ramifications of the facial nerve have been in part removed. Experience has shewn that this is an unavoidable consequence of all such operations; but from the testimony of authors*, and other considerations, I am induced to think that motion will be eventually regained.

There were present at this operation Mr. Travers, Mr. Wakefield of Battle Bridge, and Mr. Croft of Arthur Street. I believe the general impression to have been, that the parotid gland was removed on the present occasion. Some molecular pieces no doubt still remain, of which the subsequent secretion is an evidence; but that the central mass of the organ was extirpated I entertain no doubt.

Whatever anatomists may be pleased to affirm to the contrary, the possibility of such removal has been confirmed by repeated experience. I will merely allude to the works of Velpeau, Liston, and Warren, amongst others, as furnishing abundant proof of the fact; and I may here refer to a case which occurred in the London Hospital, and which is reported in your journal of the 5th February, 1831. This operation was performed successfully by Mr. Luke, to whom I am indebted for the foregoing reference.

Jan. 25, 1843.

* Vide Warren on Tumors.

ANALYSES AND NOTICES OF BOOKS.

“L'Auteur se tue à allonger ce que le lecteur se tue à abrégér.”—D'ALEMBERT.

The Physical Diagnosis of Diseases of the Lungs. By WALTER HAYLE WALSH, M.D., Professor of Pathological Anatomy in University College, Physician to the Hospital for Consumption, &c. London, 1843. 8vo. pp. 317.

THIS is a work of great merit and utility, condensing the most ample and well-digested information within very moderate limits. The student will here find every phenomenon connected with the physical exploration of the lungs lucidly described, and accurately referred to the healthy or morbid condition of which it is indicative. Complete justice is done to the subject of auscultation, while that of percussion deservedly occupies a much larger share of attention than is usually bestowed upon it. In contemplating the wider range of phenomena embraced by auscultation, we are too apt to lose sight of the far greater certainty of the signs afforded by percussion. Dr. Walshe has also given proper attention to the inspection and mensuration of the chest, and to other minor means of physical exploration, which occasionally afford considerable aid to diagnosis.

The work is divided into three parts. The first contains an exposition of the various methods and results of physical examination; the second embraces a tabular view of the physical causes and ordinary seat of morbid signs, with the names of the diseases in which they occur, and a synopsis of the physical signs of diseases of the lungs; the third part forms a commentary on the two preceding, and affords illustrations of doubtful points, and minute distinctions and details, which, if earlier introduced, would have tended to embarrass the student, and render the enunciation of simple facts less perspicuous; but which, in the place judiciously assigned to them by Dr. Walshe, will be found highly valuable to the experienced auscultator. The book is in all respects an excellent one, and we can conscientiously recommend it as equally useful to the student and practitioner.

Pharmacologia: being an extended Inquiry into the Operations of Medicinal Bodies, upon which are founded the Theory and Art of Prescribing. By J. A. PARIS, M.D. Cantab. F.R.S. &c. &c. Ninth edition, rewritten, in order to incorporate the latest discoveries in Physiology, Chemistry, and Materia Medica. 1 vol. 8vo. pp. 622.

A WORK which has gone through nine editions, and which is so well known to, and deservedly esteemed by, the medical profession, as is Dr. Paris's *Pharmacologia*, requires no eulogy from us. In the advertisement to the sixth edition, published in 1825, Dr. Paris states that upwards of *ten thousand* copies had been sold within a very few years. Since then three editions have been published.

The present edition has been entirely rewritten. It is divided into three parts: the first treats of the “*Revolutionary History of the Materia Medica*,” the second is “*On the Physiological and Chemical Action of Medicinal Substances*,” and the third is, “*On the Theory and Art of Prescribing*.” The author has omitted all notice of special pharmacology. His reasons for doing so are best stated in his own words:—

“As years have rolled on, the works of my younger days have been succeeded by others which have kept pace with the successive discoveries of science, the increasing range of experience, and with those corrections of theory, and refinements of nomenclature, which must be ever progressive with the advancement of knowledge. We may now be said to possess works, whose authors have collected the scattered rays which emanate from every department of the sciences, in order to illustrate the objects of their study. The *Materia Medica* of Pereira, and the *Dispensatory* of Christison, lie on the table of every intelligent practitioner without a rival; so complete and accurate do I consider their ‘special pharmacology,’ that I shall for the future abstain from republishing the second part of my work, which, through eight editions, has been devoted to its investigations; and for this omission I offer the compensation of a much more extended view of that province which I must continue to regard as peculiarly my own, for no author, of the least

repute, has hitherto invaded it—THE PHILOSOPHY OF MEDICINAL COMBINATION, from which alone can be deduced the THEORY AND ART OF PRESCRIBING.”

We know not whether the author is acquainted with a gross plagiarism practised on his work by a continental writer*, who has translated *verbatim* a considerable part of his “Pharmacologia,” including the entire chapter “On the Theory and Art of Prescribing,” without acknowledgment.

Dr. Paris’s work contains a great mass of useful and important pharmacological information, both theoretical and practical, on topics not discussed in other works either British or foreign. To it, therefore, all succeeding writers on these subjects must be indebted; and every intelligent student and practitioner must have recourse to it, if they desire to be on a level with the existing condition of our knowledge of the actions of medicines, and the principles and art of prescribing.

MEDICAL GAZETTE.

Friday, February 24, 1843.

“Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso.”

CICERO.

LAST REPORT OF THE REGISTRAR-GENERAL.

THE fourth annual report of the Registrar-General is now lying before us. It contains an abstract of the births, deaths, and marriages in England and Wales for the year ending June 30, 1841; with some brief comments by Mr. Graham, the Registrar-General, and very copious ones by Mr. Farr. We will touch upon a few of them.

It appears that the proportion of marriages to the population is greatest

in the metropolitan district. This arises, in part, from the number of persons between 20 and 40 years of age, who flock to London and settle there; and, partly, from the inhabitants of the neighbouring districts preferring the metropolis as the place of marriage. To this might be added another reason. Marriage is, to a certain extent, a test of prosperity, and the most skilful and thriving workmen naturally select London as their residence. In every district except the south-eastern, the proportion of marriages was smaller in 1841 than in 1840; and if we compare the former year with 1839, the proportion of marriages was smaller in seven districts out of the eleven; so that it might not be hypercritical to attribute the diminution in 1841 to the first pinchings of commercial embarrassment.

The proportion of men and women who marry while minors varies considerably in different parts of the kingdom. Out of 367,894 couples who were married in the three years ending June 1841, 4·69 per cent. of the men, and 13·78 per cent. of the women were under age; but while, in the south midland district, the ratios were 20·6 per cent. of women, and 7·57 of men, in the metropolitan they were only 7·70 among the women, and 1·69 among the men.

The remarkable fact, to which we have before requested the attention of our readers, that large masses of the population of England are so uneducated, that they cannot even write their own names, continues to be attested by these registers. On the average of the three years, 33 men in 100, and 49 women in 100, signed with marks. The proportion varies extremely in different counties. Thus 16 men out of 100 in Cumberland used marks, 19 in Westmoreland, Northumberland, and the East Riding of York; but 46 in Wor-

* Dr. Kluyskens: “*Matière Médicale Pratique, contenant l’histoire des médicaments, leurs vertus, leurs compositions officinales, leur application aux diverses maladies, ainsi qu’une dissertation sur l’art de les prescrire d’après des principes fixes et scientifiques.*” 2 vols. 8vo. Gand, 1824.

cestershire, 47 in Suffolk, and 52 in Bedfordshire.

It might seem strange at first, that while the metropolitan district ranks at the head of this educational list, having only 12 per cent. of men, and 24 per cent. of women, among the markers, the neighbouring counties should stand much lower, and some of them close to the bottom of the catalogue, in the regions of intellectual night! Hertford is actually below Wales, and her marksmen and markswomen outnumber her writers! How is this? The explanation is, no doubt, to be partly sought in the fact we alleged above, that the choicest (and consequently the best-educated) workmen throng to London, and thus give it a credit which does not altogether belong to it. Hence it reaps the best fruit, not only of its own schools, but of those in the rest of the kingdom:—

“*Miraturque suas frondes, et non sua poma.*”

Still, this must not be taken as a defence of the Bæotian state of Hertfordshire.

The total number of buildings belonging to dissenters, and registered for the solemnization of marriages, up to June 30, 1842, was 1922. The number of sects in the list is far smaller than would be popularly supposed, as it scarcely exceeds two dozen. Among the rarer, or less known sects, we may mention the “Relief Synod, or Church,” who have five such registered buildings, all situated in Northumberland or Durham; the Swiss protestants, who have one in Middlesex; and the Christian Israelites, who have two, one in Yorkshire, the other in Lancashire. The Independents, or Congregationalists, on the other hand, have 798 of these Temples of Hymen, being more than a third of the whole mass.

The first paper by Mr. Farr is on Population, which need not detain us

long. Mr. Farr is only a semi-Malthusian, and does not adopt all the theories of that celebrated economist. He hints, indeed, that the women of Bedfordshire and Huntingdonshire need not marry as early as they do; but then a note on the same page gives the antidote to this recommendation in the shape of a quotation from the *Nova Atalantis*.

Nor does Mr. Farr hold with those melancholy Malthusians, who fancy that while population increases in geometrical progression, the means of subsistence increase only in arithmetical progression. The population of England has nearly doubled in the last forty years; but has not the quantity of food doubled also? Clearly; and has not the same agreeable phenomenon taken place in France, Prussia, Austria, and every prosperous European state? Unquestionably; and therefore the contrary doctrine is merely a philosophical puzzle, like those with which the sophists of old used to recreate their auditors; it should be left exclusively to professed hypochondriacs, being what is vulgarly but expressively called “all gammon.”

Under the head of Statistical Nomenclature, Mr. Farr has given a list of names for the use of those who return the causes of death in the bills of mortality. The first column contains the names recommended; and the synonyms, which may be used at the discretion of the practitioner, are placed opposite. Thus in the first column we have *bronchitis*, and opposite to it, “Inflammation of the air tubes, catarrh, tracheitis; peripneumonia notha.”

The selection of names for the first column is excellent; few of them being either strange in themselves, or unfamiliar to the British practitioner. We do not, however, like *diphtheria*, which occupies the place of honour, nearly so well as *angina membranacea*,

which stands opposite; instead of *ne-cusia*, which will never make its way in the world, we would propose *dis-sectors' disease*; and we would say *granulated* or *tuberculated liver*, instead of "cirrhosis."

Bright's disease is called in the first column "granular disease of the kidneys, or nephria." We have no objection to the first name, but the second is very bad, as it would be constantly confounded with *nephritis*, which has its separate place in the catalogue. Dr. Young, after giving Linnaeus's aphorism of classification, that "generic names very nearly resembling each other are likely to cause confusion," adds; "for instance, Synochus and Synocha. In fact, words formed for one language, should be capable of being translated into another, so as to retain their sense, independently of any termination, which must be peculiar to a single language, or to others most nearly related to it."*

Mr. Farr seems to wish to reduce this error into a system, and thinks that pure inflammations might be distinguished from those which supervene in cachexies, and in the course of other diseases, by restricting the termination *itis* to the former, and *ia* to the latter. Thus "simple inflammation of the lungs would be designated *pneumonitis*; the inflammation of the lungs occurring in small-pox '*pneumonia*.'"

It is hardly necessary to observe that this scheme would add most largely to the confusion of medical nomenclature; and the coterie who used the new names would be obliged to add an interpretation for the use of the remainder of the therapeutic commonwealth.

Next comes a very useful paper; it is an alphabetical list of diseases, and causes of death, nearly all of which have been met with in the registers—with references to the statistical nosology previously given.

Some of the terms in this list are very strange, and occasionally inexplicable. Thus we find abstraction of the brain, bleeves, bowel hives, crick, croak, gouche, and heart hives. The thrush has many rustic names, such as, frog, frox, throcks, lily.

Here are a few more. "Inflammation of the rim of the belly" means inflammation of the diaphragm; "yellowart" stands for jaundice; and "thrift" remains uninterpreted. "Span of the back" perhaps means dislocation or subluxation of the spine, from the German *spannen*, to stretch out, to strain. Of "surfeit" Mr. Farr observes, that it is an old term, and was formerly applied to cholera. Rather perhaps, as Johnson defines it, to "sickness or satiety caused by overfulness;" though the connection with cholera may appear from Bacon, who says, that "surfeit many times turns to purges, both upwards and downwards."

Of "planet-stroke" Mr. Farr justly observes that it is vague, and queries whether it may be equivalent to apoplexy, parlysis, or mania. We rather conjecture that it was formerly applied to those who wasted away without any obvious cause, to cases of marasmus or atrophy, Johnson defines planet-struck "blasted; *sidere afflatus*."

The last of these terms we will mention is "wearying." It may possibly be the disease which Darwin calls *tedium vitæ*; but is more probably intended for a kind of heart-broken lassitude.

Mr. Farr then gives an essay on Nomenclature, in which he proposes, or half proposes, a whole cluster of intolerable names for disease, such as

* Medical Literature, 2d edition, p. 28. Synochus and synocha are from Cullen; Magendie has *vératrine* and *véatrin* to express two different substances. *Formulaire* 8th édit. pp. 151, and 161.

pyencephalus, choirencephalus, carcino-pneumon, carcimamma, &c. Let us do him the justice to say that he does not insist on their adoption; and while he affirms that hæmencephalus, necrencephalus, hyperencephalus, and hypercardia may be advantageously adopted, he acknowledges that, in other cases, it will be simpler to write, cancer of the breast, liver, brain, than three compound names; "and more convenient to describe the disease by the addition of the locality affected, as 'cancer of the tongue,' 'of the œsophagus,' 'of the stomach,' 'of the colon,' &c., than to invent specific names, which are only required in the place of descriptions, when the things or facts have to be frequently considered or mentioned." Soon afterwards, a horde of new names is introduced to signify the diseases produced by sundry poisons; *argyria* for the malady caused by the salts of silver; *cypria* for the one induced by the oxides and salts of copper; and *morphinia* bearing the same relation to morphine.

Nay more, in accordance with the old theory lately revived, by which many diseases are supposed to depend on specific poisons fermenting the blood, Mr. Farr wishes to fit each such disease with a new name for its "zymotic principle." Thus the zymotic principle of scarlatina is to be called *scarlatinine*, of pertussis, *pertussine*, of typhus, *typhine*, and of cholera, *cholerine*; of hydrophobia (to be re-named *lyssa*) *lyssine*, and so on. Let us fervently hope that none of these terms may be adopted:

Dii meliora piis, erroremque hostibus illum!

But enough of this. It appears that "the mean temperature of the year 1843 was 50° of Fahrenheit. It was 0·8 below the mean annual temperature of the ten years 1831-40, but higher than any year since 1835. The highest

temperature attained in the year was 83°, the lowest was 21°."

On examining the table which is given of the mean temperature, as observed at the apartments of the Royal Society, we see that January is the coldest month in the year, and that every following month is warmer than the preceding one up to July inclusive; and every month after July cooler than the preceding one. This rule is drawn from the mean of ten years, but exceptions, of course, occur in single ones. Thus, in 1839, the mean temperature of June was 62½°, of July 62°, and of August also 62°.

The reigning epidemic of 1840 was scarlet-fever. The deaths from this disease during three years were as follows:—

1838.	1839.	1840.
5,802	10,315	19,816.

The deaths put down to ascites and to dropsy in the three years are—

	1838.	1839.	1840.
Ascites .	63	120	200.
Dropsy .	13,342	12,251	13,261.

The enormous preponderance of number under the vague head of "dropsy," shows how little progress has been made in diagnosis, or else how carelessly the certificates are filled up; and Mr. Farr assures us that nearly as many cases of simple dropsy are registered in the London hospitals, as out of doors in private practice.

In 1840, there were 14 deaths from inflammation of the spinal marrow, the ages of the patients varying from 13 days to 65 years. It would be desirable to know whether these cases are set down to "myelitis" merely from the conjecture of the practitioners, or from the results of post-mortem examination.

Under the head of "violence" we find the death of a person æt. 14, attributed to an overdose of calomel; a man æt. 26, sacrificed to Morison's

pills; four infants killed by Godfrey's cordial; and a child aged one year, destroyed by sucking its mother, who was under the influence of the fumes of white lead. We might pursue this gleanings of facts, but our limits warn us to cease. The reader who shrinks from penetrating a forest of figures without aid, will find Mr. Farr an admirable conductor; under his guidance it will be

"A mighty maze, but not without a plan!"

ROYAL MEDICAL & CHIRURGICAL SOCIETY.

February 14, 1843.

DR. ADDISON IN THE CHAIR.

An Account of an unusually large Biliary Calculus, voided by the Rectum. By JAMES ARTHUR WILSON, M.D. Physician to St. George's Hospital.

THE patient in this case was a gentleman, aged 73, of temperate habits, and who had resided in the West Indies the greater part of his early life. The calculus was voided with fluid feces from the rectum, after many days of exhaustion by hiccough and vomiting. The early symptoms were constipation, loss of appetite, and sickness, succeeded by jaundice. Within a fortnight the urine and feces recovered their natural appearance, the jaundice disappeared, and the patient resumed his usual pursuits. Shortly, however, all the urgent symptoms returned, with frequent severe hiccough, and for two days the case seemed to be verging to a fatal termination. On Dec. 17, the bowels, long previously inactive under large doses of purgatives, began spontaneously to relieve themselves, and gave passage to a calculus as large as a full-sized walnut, when all the urgent symptoms gradually and entirely subsided.

The author alludes to another case which occurred at St. George's Hospital, in which after death "a round calculus as large as a walnut" was found impacted in the ductus communis hepaticus. He concludes by observing, that there is an inference from these cases of biliary concretion that may with advantage be remembered in our diagnosis of jaundice and constipation, viz. that the progress of gall-stones through the ducts (even when inordinate in their dimensions), is not disproved by the absence of pain in the epigastrium.

Researches into the Connection existing between an unnatural degree of Compression of the Blood contained in the Renal Vessels, and the Presence of certain Abnormal Matters in the Urine. — By GEORGE ROBINSON, M.R.C.S.L. — [Communicated by MARSHALL HALL, M.D. F.R.S.]

The author commenced by briefly enumerating the advantages which the kidney presented for an experimental investigation of the laws regulating effusion. This organ could be readily exposed in the lower animals, without the infliction of much pain or injury, and its artery, vein, and duct, separately secured by ligature. The importance of Mr. Bowman's recent discoveries, in enabling us better to understand the mechanism of the process, was also alluded to.

The experiments, 34 in number, were divided into two chief classes.

The 1st being intended to illustrate the peculiarities of venous obstruction, contained the results of 20 experiments.

The 2d, having for its object the explanation of some of the effects of increased determination of blood, contained 14 experiments. The experiments are given in detail, but our space will only allow us to state the conclusions the author draws from them.

After some remarks on the morbid appearances met with in certain of the above experiments, and which seemed to be analogous to changes occasionally occurring in the human kidney, the paper concluded by expressing the author's opinion—

1. That the process of the effusion of albumen, and lymph, through the coats of the vessels of the living body, is dependant on, and regulated by the degree of the compression of the blood contained in those vessels.

For the production of an intense degree of compression, the co-operation of two essential causes is required—the momentum of the arterial blood derived from the contractions of the ventricle constitutes the force which produces the compression; but as a counter-resistance is required before the latter state can occur, it is only when some obstruction to the free passage of the blood through the smaller vessels exists that the effects of undue compression are perceptible.

As the amount of the momentum of the arterial blood, and the completeness of the obstruction vary in different instances, so will the nature of the effusion.

2. That simple compression of the blood in its smaller vessels will cause the exudation of liquid albumen, of coagulating lymph, and the escape of blood. And as both the essential causes of undue compression are known to exist in inflammation, it is but reasonable to conclude that the primary

effects of the latter, which are identical with those of undue compression, are the mere consequences of that physical cause.

3. That there is no relation between the composition of the effused matters and the extent of the dilatation of the coats of the vessels, as measured by the quantity of blood they contain. To establish this point more clearly, part of a table, shewing the relative weights of the healthy and engorged kidneys, and the composition of the urine, was read.

4. That a gradually increased quantity of blood may be directed to the vessels of a particular organ without causing any unnatural compression of that fluid.

5. But the concluding experiments shew that if the quantity thus determined be considerably and *suddenly* increased, then some of the effects of undue compression of the blood will be produced.

FELLOWS' CLINICAL PRIZE REPORTS.

By ALFRED J. TAPSON,
University College Hospital, 1842.

[Continued from p. 718.]

CASE VI.—*Extremely well-marked general anæmia, with hypertrophy of the heart; obstructive disease of the aortic valves, and incipient phthisis pulmonalis. The anæmia cured by the administration of citrate of iron, &c.*

JANE LANSLEY, ætat. 21, admitted June 2, 1842, under Dr. Taylor. A young woman of tall and moderately stout conformation; very pale, and rather sallow complexion and sanguineo-nervous temperament. Is a native of Dorsetshire, but has been living in London for two years as servant of all work. Her habits of life have been regular; has always had enough to eat and drink; never drank to excess; parents both living and healthy, and several brothers and sisters also tolerably healthy. None of the family are subject to any particular complaint, but she thinks some of her mother's family died of consumption. Is naturally rather weakly, but never ill till within the last year or two. During the last three winters she has had a good deal of cough, attended generally with expectoration of phlegm, and occasionally pain in the side; she was worse the winter before last, and, in consequence, she went home to Langley, near Andover, which is, she says, a wet place, but the people are not subject to ague. She, however, soon had an attack of ague, which lasted four months. It was at first of the tertian type, but towards the end it became quotidian. Almost immediately after her recovery from this she inadvertently slept in a damp bed; and this produced an attack of rheumatic fever, with

which she was confined to bed for seven weeks. She was salivated, and got well, and somewhat regained her flesh and colour, but has never had so much colour as she had before the ague. During the attack of rheumatic fever she had pain in the left side of the chest; and ever since then she has been subject to pain in the right side of the head, worse always in the erect posture and in damp weather, but not felt at any particular time of the day. She has also had pain in the right side, and shooting pain in the right arm and shoulder, and cramps in the legs. The catamenia were regular till she had the ague: they ceased when she had the rheumatic fever, and did not return for three months after; but since then they have been regular as to time, but scanty in quantity and pale in colour.

During the last six months she has been getting thinner and paler, and has had some shortness of breathing and more cough; and it has not left her, as hitherto, at this time of the year.

The present attack she dates to March last, when she caught a severe cold, attended with shortness of breathing, a very bad cough, and pain in the chest. She was confined to her bed for a few days, and then got better for a time; but lately the cough and shortness of breath have been more troublesome, and the expectoration has for a month been tinged with blood. She has never spit blood at any time, except in this slight quantity, just enough to tinge the sputa red, and that chiefly in the morning: for about the same period she has perspired at night a good deal, generally finding herself covered with perspiration if she wakes up in the night. During the last fortnight her legs have swelled a good deal in the day-time; the swelling generally subsiding in the night. The feet have not been subject to get cold; indeed, she says they are often very warm.

The present symptoms are as follows:—The body generally is not at all emaciated, but the flesh is rather flabby; the surface is warm and moist; the countenance is very pale, and has a slightly sallow tinge; the expression rather heavy and languid; the lips, gums, and conjunctive, are very pale; has slight headache, much worse sometimes than at others, and easiest in the semi-recumbent posture. If she moves suddenly she feels giddy, and has palpitation of the heart. At times she has noises in the ears, and dimness of vision, and a strong light pains the eyes. Her spirits are very variable; she generally feels heavy; sleeps a good deal, but is much disturbed by frightful dreams: there is no pain or tenderness along the spine; the breathing is quick, especially after any exertion or excitement; she has a slight cough, and expectorates a viscid tenacious mucus strongly tinged with streaks of blood; if she takes

a deep inspiration it gives her pain at the sternum; tongue rather tumid, pale and flabby, not furred; the appetite pretty good; bowels regular at present, but are apt to be costive; urine plentiful, of a pale very turbid yellow colour, specific gravity 1010; reaction very slightly acid. Heat and liquor potassæ throw down a copious flaky precipitate of the phosphates.

Physical signs.—The sound on percussion is too dull under both clavicles; there is not much difference between the two sides close to the clavicles, but about two inches lower down the left side is rather the duller of the two. Percussion is also dull in both supra-scapular fossæ: no marked difference between the two. The vocal vibration is more perceptible to the hand under the right than under the left clavicle. The respiratory murmur is too rough, and loud under both clavicles, and on the left side is rather bronchial; and there is a similar difference in the two supra-scapular fossæ.

The heart's action is rather quick; the impulse rather strong and somewhat too extended, as also is the cardiac dullness. The first sound is accompanied with a rough "bruit de soufflet," heard chiefly at the base of the heart, but heard also at the top of the sternum and in the carotids. There is a murmur also heard at the apex, at the same time, not so loud as that at the base, but of the same character; between the base and apex there is less murmur than at either of these situations. The pulse is 100, regular, and tolerably full. The dullness over the liver seems to be increased in extent, reaching above the right nipple, and as low down as usual.

R. Ferri Citratis, gr. v.; Infusi Aurantii, ʒiiss. ft. haust. ter die sumendus. Full diet, and half a pint of porter daily.

June 4th.—She took two doses of the medicine yesterday. The second dose made her vomit about half an hour after taking it, and she has had slight headache since. This morning also she felt sick after taking it, but did not vomit. The cough was troublesome in the night; there is less expectoration, and it is less bloody than yesterday.

6th.—Feels giddy at times; had pain in the chest, and a good deal of cough last night; pulse 80; tongue clean; bowels open; urine free, rather darker coloured, specific gravity 1012, reaction acid, not albuminous.

Auge Ferri Citratum ad gr. vij. per dosi.

8th.—She appears to have a little red colour in the cheeks now, which she had not when she came in; the cough is better; no expectoration of blood or mucus. There is a distinct loud venous murmur in the neck, arrested by pressing on the jugular vein above where the stethoscope is applied. The murmur with the first sound of the heart

is not less than it was. The inspiration is "rude" under clavicles, more so under the left than under the right; percussion much the same as before; appetite good; the medicine does not disagree with her now.

Extra full diet.

9th.—Sleeps very well now, and does not dream so much as she used to do; the legs do not swell much; the lips and cheeks are decidedly gaining colour; she feels stronger; has less palpitation of the heart when she moves; pulse 76, moderate in size and strength; the bowels keep regular without the aid of medicine.

11th.—Had slight headache and giddiness yesterday, but they are gone now; has very little cough, except when she first wakes in the morning; the murmur with the first sound of the heart is not heard so distinctly at the apex as intermediately between this and the base, becoming gradually fainter and fainter from the base towards the apex; it is of much the same character in all situations, differing only in degree.

13th.—Feels stronger altogether; sleeps well, but still dreams a good deal; feels giddy if she stoops; the legs still swell a little during the day-time; she complained of pain in one of them last night; pulse 68, regular and rather small; venous murmur less distinct; tongue pale and flabby; the appetite is rather better than it has been for some time past, better than it was when she came in, although she then stated that it was good; bowels regular; urine quite clear, natural in colour, sp. gr. 1012, reaction acid.

Aug. Ferri Citratum ad. gr. ix. pro dosi.

15th.—Countenance much improved; the expression far more cheerful; continues to gain colour and strength; both the murmurs are distinct; urine scanty, sp. gr. 1026; reaction acid; colour much darker than it was; contains a copious cloud of mucus.

17th.—Improving gradually; the urine increased in quantity, sp. gr. 1024; reaction pretty strongly acid; very turbid; heat clears it, and so does nitric acid, and deepens the colour with effervescence.

18th.—Has slept well for three nights without dreaming; complains of slight headache, and dimness of vision.

Ordered to take an hour's walk every day.

20th.—Has much more colour in the face, and does not look near so heavy about the eyes; has been out for a walk, and this has caused no palpitation nor headache.

22d.—A deep inspiration does not now produce pain in the chest, as it did when she came in, and moderate exertion causes very little palpitation. Since she has walked out daily the cough has been rather increased, and a slight mucous expectoration has returned; venous murmur much diminished,

and also that with the first sound of the heart.

25th.—Feet still swell a little in the day, but the swelling subsides during the night; pulse 80, regular and moderately full; cough and expectoration rather less again; still has dimness of vision, and at times it is so bad that she can scarcely see.

27th.—No venous murmur to be heard to-day, and that with the first sound is very much diminished, and is less rough.

30th.—She has not only gained a considerable amount of colour, but seems also to have got stouter, and the flesh looks firmer; her eyes generally feel dim towards evening, and they are still too sensitive to the light; the breath feels short when she walks; cough trifling; the eyes have swelled rather more the last day or two, and they ache after walking; the murmur with the first sound is very feeble when she is lying down, but is increased when she stands up.

The sound on percussion is duller above the left clavicle, also on it and below it than in the corresponding parts on the right side; the respiratory murmur is louder and rougher than natural under both clavicles, and rather bronchial; more on the left than on the right side: posteriorly, the respiration is loud and blowing at the apex of both lungs; more blowing on the left than on the right side.

July 1st.—Venous murmur sometimes audible, and sometimes not; murmur with the first sound feeble, but distinct.

4th.—Coughs in the morning, and spits up a little mucus, but never any blood with it; her nose bled a few days since; is much the same in other respects.

She was discharged July 5th, but as she did not leave the hospital for two or three weeks (being employed there) the heart was examined again on the 11th and 20th. On the 11th, the impulse was still too strong and extended, and a slight murmur was heard at the base of the heart and in the arteries of the neck; she had had more palpitation; the venous murmur was also distinct. On the 25th, the murmur at the base was still audible, but not very loud: the venous murmur was also heard; it had a cooing character.

REMARKS.—This was an extremely well-marked case of anæmia, presenting almost all the symptoms which are described as belonging to that state of the body in which there is a deficiency of blood, and an alteration in the quality of that which there is; the red particles and fibrine, and probably also the salts, being diminished in proportion to the other elements. The appearance of the patient by itself was quite sufficient to prove the existence of anæmia, whatever else there might be with it. We shall find, presently, that it was complicated with disease of the heart and phthisis.

We shall, as usual, divide the marks or evidences of disease into the general symptoms and physical signs; and after thus enumerating them, remark on any peculiarities of the case.

I. The *general symptoms* may be subdivided into, first, those which are referrible to the state of the blood; secondly, those referrible to the heart; and thirdly, those referrible to the lungs.

First, *Those referrible to the state of the blood* were as follows:—The complexion of the face was pallid, and it was also the surface of the body generally (the arms, neck, &c.) were somewhat sallow, and had an unusually opaque appearance; all the visible parts of the mucous membranes, which are usually of a florid red colour, were here only slightly pinkish; as the lips, gums, conjunctivæ, &c. The extremities were not cold, as they commonly are in anæmia; but this was accounted for by the state of the heart. To the deficiency of blood we may also refer the headache, which was chiefly on one side, and was worse in the erect, or in the perfectly horizontal posture, than in the semi-recumbent; also the giddiness, noises in the ears, dimness of vision, and morbid sensibility of the eyes to light: probably, also, to the deficient and disordered state of the blood were due the general languor and heaviness of the countenance, the variable state of the spirits, and the deranged condition of the secretions, which was shown by the constipation of the bowels, the peculiar state of the urine, and the scanty and pale catamenia; partly, also, the easily excited palpitation, and the swelling of the legs. This last symptom seems to be very easily produced in some persons, especially females: thus it is very common in those who are obliged to sit up several nights consecutively, if they are not accustomed to it, especially in hot weather.

Secondly, *the general symptoms referrible to the heart and the lungs* will be noticed in connection with the physical signs of those organs.

II. *The physical signs* may be subdivided into, first, those referrible to the anæmia; secondly, to the heart; and, thirdly, to the lungs.

First, *those referrible to the anæmia*.—There was a continuous, pretty loud, blowing murmur heard over the jugular veins, chiefly on the right side; proved to be situated in these veins by the fact that it was instantly arrested by pressing on the external jugular vein above the spot where the stethoscope was applied, and there was a loud rough rasping murmur heard with the first sound of the heart at the base and apex, also at the top of the sternum and in the arteries of the neck: this we shall notice more particularly under the next head.

Secondly, *those referrible to the heart*.—

The dulness over the heart was too extensive; the impulse was too strong, and felt over too large a space; and, in connexion with these signs, there were some symptoms, namely, easily excited palpitation of the heart; some oedema of the legs, which persisted after the cure of the anæmia; difficulty of breathing on the least exertion, particularly going up stairs; and a tolerably firm pulse at the wrist. This would have attracted no notice had it not been for the presence of the anæmia, but as in this state the pulse is commonly quick, small, weak, and very compressible, and sometimes accompanied with a peculiar thrill, it showed there must be some modifying cause in this instance; and this cause was, no doubt, hypertrophy of the heart, as proved by the preceding signs and symptoms. In addition to all these there was a murmur mentioned under the last head as occurring with the first sound of the heart. The question here arises, to what cause was this murmur due? to the anæmia alone? to some disease of the heart alone? or to the two combined? We know that in well-marked anæmia there is generally a murmur heard with the first sound of the heart at the base, &c. as here; and this is the only cardiac murmur produced by anæmia. It is sometimes very rough, even in cases where it has been proved by post-mortem examination that no disease of the valves had existed; but in this case it was so rough as to constitute a rasping sound, and had it occurred in a subject who was not anæmic, it would have been considered a sufficient proof of the existence of valvular disease. If this be granted, we have then no mode of arriving at a satisfactory conclusion, but to trace on the case till the anæmia is removed, and then we shall easily be able to decide whether it depended solely on this cause or not, for if it did, of course the murmur would not persist after the anæmia was cured. Adopting this plan, then, it appeared very probable for a long time that the murmur was dependent almost solely, if not exclusively, on the anæmia, for as the patient recovered her colour and strength the murmur became gradually less and less loud and rough, till at length it was scarcely perceptible, and on one or two occasions, when she was lying down, it was so indistinct that had we not traced the disease through its course, we should not have detected the murmur at all. But did it continue thus indistinct for any length of time? It continued so as long as the patient remained quiet and only took a moderate walk every day; but no sooner had she resumed a little active employment, than the murmur again became loud and distinct; not so loud as before, but almost as rough, and this without any return of the anæmia. How, then, can

we reconcile these opposite conditions of the physical signs at different periods of the disease? namely, at first a loud and rough murmur, with considerable anæmia; then scarcely any murmur, and the anæmia gone; and, lastly, the murmur again loud and rough without anæmia. It is quite clear, from the last condition, that there must have been some cause for the murmur besides the anæmia; and as to the second condition, the only explanation we can offer is, that the murmur became less with the cure of the anæmia, because when this was effected one cause of the murmur ceased, viz. the thin watery state of the blood (thin fluids being more easily thrown into sonorous vibrations than denser fluids), but that another cause still remained, viz. some disease of the valves of the heart. Nevertheless, this was not sufficient to produce much murmur so long as the heart's action was quiet and regular; but the moment any excitement was produced, as by the resumption of labour, the murmur returned. We know that excitement was produced, for it is stated that there was much more palpitation, and very possibly, also, some slight irregularity of action as well as increased force.

This case shows us that there are at least three causes which may contribute to produce a murmur with the sounds of the heart, viz. 1st, valvular disease; 2d, a poor watery state of the blood; and, 3d, increased and irregular action of the heart. Of these, the first is an amply sufficient cause in itself, if considerable. The second may, perhaps, be sufficient, but if so, how is it that it is not always present in well-marked cases of anæmia? This, Dr. Taylor thinks, may be explained by supposing that in all those cases of anæmia which are accompanied by a murmur there is some slight organic lesion in the heart, which is not sufficient by itself to cause a murmur, but which, when added to the watery state of the blood in anæmia does produce a murmur, from the greater facility with which this is made to produce sound, than blood of the natural density. The 3d is probably not a sufficient cause by itself: very commonly two of these causes coexist; either the first and second, or the first and third.

Concluding, then, that the murmur depended on some disease of the valves, we have next to consider what that disease was. The murmur was heard with the first sound;—now the only two murmurs heard with the first sound (*i. e.* on the left side of the heart, to which we confine our attention), are those produced by obstructive disease of the aortic valves, and regurgitant disease of the mitral valves. These two may co-exist; did they here? or did only one exist? and, if only one, which was it? There was, it is stated, a loud murmur heard at the base, and at the

top of the sternum, and in the carotids; there must, therefore, have been obstructive aortic valvular disease, as regurgitant mitral murmurs are either heard not at all in the neck or only feebly, whereas here it was loud. There was also a murmur heard at the apex; and the only question is, whether this depended on the aortic valves, or on the mitral valves. It might have done on either, and we are not aware of any positive means of distinguishing between the two: at the same time, however, as the murmurs at the base and the apex were of the same character, differing only in degree, the probability is that they were both produced by the aortic disease; and this is somewhat confirmed by a change which occurred in the situation in which the murmur was best heard (vide report of June 11th.)

Thirdly, the physical signs, &c. referrible to the lungs, were such as indicated the existence of condensation of the upper portion of both lungs, chiefly of the left. Collating the physical signs obtained at different times, we find that anteriorly there was dullness on percussion above, on and below the left clavicle, as compared with the right, and this was not so clear as in the healthy condition. The respiratory murmur was louder and rougher under both clavicles than natural; rather rougher on the left side than on the right, and somewhat bronchial—a condition expressed by the word “rude;” the vocal fremitus was felt more distinctly on the right than on the left side. *Posteriorly,* there was very little difference on percussion in the supra-capsular fossæ, but the respiration was too loud in both, and blowing on the left side. There were also some general symptoms, viz. a short cough for the last three winters, attended always with more or less expectoration of mucus, which for the last month had been strongly tinged with blood. The cough had been worse during the last six months; she had also had shortness of breathing, pain in the side, and profuse night perspirations for a month or more. If we combine these with her weakness, and her statement that she was thinner than she used to be, we can hardly doubt that there was consolidation of the upper portion of both lungs, and that this consolidation was of a tuberculous nature. We may here make a remark on one fact that was exemplified here, though not by any means so distinctly as it frequently is—a fact that was noticed by Dr. Stark many years since—viz. that tubercles of the lungs and the cavities produced by the softening and elimination of the tuberculous matter are more apt to extend backwards than forwards. In this case the bronchial respiration was much more marked in the supra-scapular fossa than under the clavicle. No means of treatment were spe-

cially adopted for the chest, and no important change occurred in the physical signs, but the general symptoms were very much improved: thus, the hæmoptysis soon ceased, and did not recur; the cough became much less, and there was very little expectoration; the night sweats ceased, as also the pain in the side, and there was very little dyspnoea, &c.

The causes of the phthisis do not appear: there was at all events no decided hereditary disposition to it, and no particular exciting cause seems to have existed; and, therefore, if any cause at all appear, it is the depraved state of the blood; this at least is very likely to have assisted in its production.

The cause of the hypertrophy and valvular disease of the heart most probably was the severe attack of acute rheumatism under which she had laboured, and which, in the great majority of cases, seems to be the cause of these affections*.

The causes of the anæmia were probably several in number. The 1st apparent cause is the ague, which disease is well known to give rise to a condition of anæmia, with a sallow dead-looking skin: we shall have a good example of this in one of these report cases. 2d, acute rheumatism, and the means used for its cure, are a common cause of anæmia: it appears from the history that she has never entirely regained her colour or strength since the attack, though for about four months she improved somewhat; but after that time, without any obvious cause, she began to fall off again. 3d, in females, anæmia is so frequently connected with some derangement of the menstrual function, that we almost naturally ask, was it here? There does not appear to have been any immediate connection between the two in this case: it seems that the menstruation ceased, as might be expected, during the attack of rheumatism, but returned soon after she recovered from it, and has since been regular, though scanty in quantity and pale in colour. It is often a matter of great difficulty, in any given case, to say what is the connection between the anæmia and amenorrhœa—to say which is the cause of the other. Arguing theoretically, we should say that amenorrhœa cannot be a cause of anæmia, whereas we can have no difficulty in understanding how anæmia may be the cause of amenorrhœa. We seldom see a case of well-marked anæmia without either actual amenorrhœa or some derangement of menstruation. On the other hand, however, we certainly see many cases in which

* The statement quoted at p. 716, line 38, from Dr. Williams' lectures, “that he had found signs of endocarditis, or pericarditis, or both, in fully three-fourths of the cases of rheumatism,” must be understood to apply only to cases of acute rheumatism.

there is amenorrhœa before there is much anæmia: but this does not oblige us to make such an improbable supposition, as that it is the cause of anæmia, which gradually shows itself: may we not suppose that they are both effects of one common cause, and that the reason of the prior manifestation of the amenorrhœa is, that the menstrual fluid is one of those secretions which serve no secondary purpose in the animal economy, and that therefore it cannot be so necessary that it should be continued as that the blood should be maintained in a tolerably healthy condition, in order that it may be able to maintain those processes which are more essential to life, for which reason it is provided that those expenses shall be first curtailed which are the least necessary to life: in other words, nature dispenses with that which probably serves merely for the perpetuation of the species, before she draws upon that which is absolutely essential to the continuation of the life of the individual. 4th, if there be tubercles in the lungs, these would prove a great source of depraved nutrition, and of a state somewhat similar to anæmia: hence the value of emaciation as a symptom of phthisis, in conjunction, of course, with other symptoms and signs, for in itself atrophy or wasting is no proof of tubercles, but merely of some general disordered condition of the system. Some of the more common causes of anæmia were absent in this case, such as poor and insufficient diet, &c.

As to the *treatment*, it is unnecessary to say much respecting that of anæmia, it being peculiarly simple and satisfactory when the disease is not complicated with any thing that would prevent the administration of iron; for if this can be given in tolerably full doses, and persevered in for a moderate length of time, it is almost a specific remedy. In some cases where iron disagrees with the stomach, it may be necessary to give some of the milder tonics first; and they may generally be usefully combined. The object of the treatment is to procure the formation of a supply of good blood; therefore with the iron, which serves to form the red particles, we should combine as nutritive a diet as can be borne, and one abounding in fibrine, in order to restore to the blood the fibrine which it has lost: likewise moderate and regular exercise in the open air should be enjoined. In the present case all these three means were used: she took the citrate of iron in pretty full doses in the infusion of orange peel. She had after a day or two the extra full diet of the hospital and porter, and had a walk daily for an hour as soon as she was able to bear it. The treatment was attended with the best results. Within a week of its commencement there was a manifest im-

provement in most of the symptoms, and she continued to improve steadily and pretty rapidly in every respect, except as regards the organic diseases. She gained flesh, strength, and colour, had a good appetite, and the medicine scarcely disagreed with her in the least. She was in the hospital as a patient for thirty-two days; but it was not necessary that she should have been kept so long on account of the anæmia; indeed, but for the complication with disease of the heart, she might very well have been discharged ten days earlier than she was.

The *prognosis of the anæmia* may have been inferred to be very favourable from what has been said above; and the result proved that it was. As regards the morbus cordis and the tubercles, we cannot give any other than an unfavourable prognosis: either of them without the other would be less unfavourable than the combination of the two; and this not only from the separate influence of each on the system, but also from their mutual action on each other.

The only point remaining to be noticed, is the state of the urine on her admission as compared with what it became subsequently. On her admission it presented in a remarkable degree the characters of anæmic urine; it was of a pale yellow colour, and very turbid, like thick lemonade; of a low specific gravity (1010), almost neutral reaction, contained an excess of the phosphates, and was exceedingly prone to decomposition. It gradually lost these characters, as stated in the reports of the 8th, 13th, 15th, and 17th of June, and on the last of these days it was decidedly acid, contained a sediment of the lithates, had a specific gravity of 1024 gr.; and, in fact, as the anæmia was being rapidly removed, we should expect that the urine would no longer retain the characters of anæmic urine.

PREVENTION OF SCURVY.

To the Editor of the Medical Gazette.

SIR,

SINCE the publication of the last number of your journal, my attention has been directed to the letters of Mr. Dalton and Mr. Berncastle, contained in the *Lancet* of Sept. 4, and Sept. 23, 1842. Both these gentlemen recommend the use of potatoes as a preventive of scurvy in ships making long voyages: Mr. Dalton, who, in two voyages, each of between two and three years' duration, found the seamen completely preserved from scurvy by the use of potatoes, evidently regards the antiscorbutic properties of this vegetable as peculiar to its raw condition; but Mr. Berncastle, though he does not mention the state in which the potatoes

were eaten in the instance observed by himself, remarks, that he does "not believe it necessary that they should be eaten raw, or with vinegar, but boiled in the usual way."

I regret that I was not acquainted with the observations here referred to before publishing my remarks on the prevention of scurvy in prisons, as well on account of the support which they afford to my own views on the subject of prison dietaries, as from my desire to do full justice to the claims of previous observers. I hope, however, that you will have the kindness to give this note a place in the next number of your journal.

Your obedient servant,

WILLIAM BALY.

Brook Street, Feb. 13, 1843.

NOTE FROM TIMOTHY GOSLIN.—
MESMERISM.

To the Editor of the Medical Gazette.

SIR,

I FEEL assured that you, and every friend of humanity, will most heartily rejoice in the most valuable discovery which has lately been made in Germany, by which such great relief will be afforded to the numbers of our fellow creatures who are now suffering so severely in these hard times. The discovery was made by the learned Professor Phillpokkett, of the celebrated University of Puffinburg. It is well known that the Professor has been long engaged in the practice of mesmerism on a very extensive scale, while he has also been one of the great patrons of homœopathy. Now the discovery in question unites the merit of both these operations. He has found out a method of mesmerizing the digestive organs, so as to render them quiescent for as long a period as may be necessary or desirable, during which period food of any kind is rendered quite unnecessary; and when food is required, he has discovered a mode of giving it in very minute quantities, when he employs a certain process by means of which a single grain of aliment will produce as great an effect as a pound in the way in which it was formerly used. I need not enlarge upon the marvellous benefit which must be derived from these discoveries: food will now be almost superseded; it is estimated that one per cent. of the quantity hitherto used will suffice for all the real wants of the system. A labourer, who formerly required his pound of bread, or cheese, or bacon, will now be kept in perfect health and vigour by a few grains; an infinitesimal part of a beef-steak, or a mutton chop, will afford a plentiful meal, while bread will scarcely be required. The only objection that can possibly be urged against this discovery is the outcry that we must expect will be raised by the landed gentry. It will, no doubt, nearly

supersede the use of corn, and amazingly diminish the quantity of oxen and sheep that will be sent to the market. But we know that they are a most selfish set, always bent upon their own interest, and quite disregarding the people at large; and, I think, they richly deserve to suffer for their unfeeling conduct. Your readers will be very happy to be informed that the Professor has made the necessary preparations for sending into this country a very intelligent pupil of his, M. Rennard, who is to act as his agent, and will give instructions in the method of putting the invention in practice. Professor Phillpokkett himself, as is well known, is a gentleman of unbounded benevolence and philanthropy, and it was his intention and earnest desire to have communicated his discovery to the world without any profit or compensation; but, at the earnest desire of his friends, he has been prevailed upon to accept a small remuneration for his services; and this he proposes to do by a charge of 90 per cent. upon the sum which will be saved to his patients, which will be only a fair recompense to him for the time and labour which he has bestowed upon his discovery, while he will still bestow an immense benefit upon the public. When M. Rennard arrives in England, you shall hear from me without delay.—I am, sir,

Your most obedient servant,

TIMOTHY GOSLIN.

Garden Lodge, Feb. 7, 1843.

SCRUTATOR'S REPLY TO DR. REID.

To the Editor of the Medical Gazette.

SIR,

My answer to Dr. Reid's charge shall be short, but conclusive. He has suppressed in his note the whole of the following sentence, which I have placed in italics, on which my accusation against him rests of attempting to reconcile a flat contradiction in a novel and most incomprehensible manner. For what purpose Dr. Reid has been guilty of suppressing this passage in his first letter, whether for perverting or promoting the truth, he best knows, and it is not worth while inquiring.

"With regard to the question whether or not Dr. Thomson was correct in stating that there was a central cavity in the corpus luteum in Fig. 4, there can be no doubt, as any one may readily satisfy himself by looking at the preparation in my possession, that there could be none. I feel perfectly satisfied that all that Dr. Thomson meant by stating that there was a central cavity (as in this he was perfectly correct) was that the true texture of the corpus luteum occupied the surface of the body only, and did not extend through the centre. The yellow

plicated structure was confined to the circumference, forming a kind of sac, the centre of which was occupied by a reddish-grey-coloured fibrinous mass exactly as you have described it." Dr. Reid constituted himself umpire in the discussion or dispute which has lately been going on about the corpus luteum. Being an "unknown person," perhaps I may be permitted courteously to inquire what are the qualifications of Dr. Reid for the important office he has assumed, and what proof he has given of his superior talents for minute anatomical research, to warrant him in deciding the question in the dictatorial manner he has done. His description of the placental tufts is universally allowed to be erroneous. What discovery, then, has he made in embryology which entitles him even to an inferior rank among the successful cultivators of the science at the present time, or by which he will be better known in future ages than I am now, or ever will be? Dr. Reid will perhaps favour your readers with answers to these questions before he again presumes to offer any remarks on the corpus luteum, or prefers any accusation against me.—I remain, sir,

Your obedient servant,

SCRUTATOR.

London. Feb. 13, 1843.

[The author has furnished us with his name.—ED. GAZ.]

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude $51^{\circ} 37' 32''$ N.
Longitude $0^{\circ} 3' 51''$ W. of Greenwich.

Feb. 1843.

		Thermometer.	Barometer.
Wednesday	1	from 44 to 53	29.83 to 29.78
Thursday	2	40 44	29.56 29.72
Friday	3	41 33	29.46 29.12
Saturday	4	27 37	29.23 29.56
Sunday	5	21 36	29.73 29.75
Monday	6	27 37.5	29.78 29.74
Tuesday	7	28 37	29.91 29.81

Wind, S. W. on the 1st and 2nd; S. W. W. and N. W. on the 3d; N. W. and N. on the 4th; N. N. W. on the 5th; N. and N. W. on the 6th and 7th.

The 1st, morning and afternoon cloudy, clear about noon. 2d, cloudy, rain in the morning. 3d, morning clear, raining before noon, snow and sleet afternoon and evening. 4th, morning and evening clear, sleet and snow in the afternoon and evening. 7th, cloudy, snow in the afternoon, rain in the evening.

Rain fallen, .58 of an inch.

February.

Wednesday	8	from 33 to 38	29.93 to 29.95
Thursday	9	34 38	29.89 29.84
Friday	10	32 40	29.82 29.76
Saturday	11	30 42	29.78 29.90
Sunday	12	31 41	29.94 29.97
Monday	13	25 39	29.95 29.85
Tuesday	14	17 39	29.66 29.55

Wind, N. and N. E. till the morning of the 24th, when it changed to the S. W.; afternoon W.; evening N. W.

Except the 13th and morning of the 14th, generally cloudy.

CHARLES HENRY ADAMS.

LITERARY NOTICE.

The Life of a Travelling Physician, from his first introduction to practice: comprising twenty years' wanderings through the greater part of Europe; with notes of events, descriptions of scenery, and Sketches of character. 3 vols. post 8vo. This work is the real life of an English physician. It consists of a Journal commenced to relieve the ennui of a dull foreign court, and continued until the Author's recent return to England.

ROYAL COLLEGE OF SURGEONS.

LIST OF GENTLEMEN ADMITTED MEMBERS.

Friday, February 10, 1843.

D. Morgan.—A. L. T. Cooke.—T. Graham.—S. P. Goddard.—W. K. Park.—G. F. Fox.—H. Payne.—J. C. Bonnett.—J. S. Woollett.—R. Chambers.

Friday February 17, 1843.

W. Thom.—S. H. Steele.—R. Brown.—T. D. Martin.—J. G. Sproston.—H. Gavin.—J. Growse.—A. C. Ayres.—R. Nugent.—G. Allen.—C. H. Duck.—W. J. Bryant.

A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, February 11, 1843.

Small Pox	11
Measles	13
Scarlatina	15
Hooping Cough	36
Croup	4
Thrush	1
Diarrhoea	6
Dysentery	4
Cholera	1
Influenza	2
Typhus	31
Erysipelas	8
Syphilis	0
Hydrophobia	0
Diseases of the Brain, Nerves, and Senses	146
Diseases of the Lungs and other Organs of Respiration	284
Diseases of the Heart and Blood-vessels	15
Diseases of the Stomach, Liver, and other Organs of Digestion	65
Diseases of the Kidneys, &c.	5
Childbed	11
Ovarian Dropsy	0
Disease of Uterus, &c.	4
Rheumatism	3
Diseases of Joints, &c.	1
Ulcer	1
Fistula	0
Diseases of Skin, &c.	2
Diseases of Uncertain Seat	94
Old Age or Natural Decay	67
Deaths by Violence, Privation, or Intemperance	22
Causes not specified	12
Deaths from all Causes	864

ERRATUM.—Page 695, col. 1, line 35, for "blood-vessel," read "blood-vesicle."

WILSON & OOLVY, 57, Skinner Street, London.

THE
LONDON MEDICAL GAZETTE,
BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, MARCH 3, 1843.

LECTURES

ON THE

THEORY AND PRACTICE OF
MIDWIFERY,

*Delivered in the Theatre of St. George's
Hospital,*

BY ROBERT LEE, M.D. F.R.S.

LECTURE XVII.

*On the Diseases of Pregnant Women—
Extra-uterine Gestation and Abortion.*

CONCEPTION sometimes takes place, but the impregnated ovum is arrested in its progress to the uterus; or, having reached the cavity of the uterus, it is liable from a great variety of causes to be expelled prematurely, with pain and hæmorrhage. The first of these accidents is called extra-uterine gestation, the second abortion; and I shall consider their causes, symptoms, and treatment, before describing the other morbid states of the gravid uterus, and those affections of the brain, and of the thoracic and abdominal viscera, which occur during pregnancy, and which depend entirely upon the sympathy which exists between the gravid uterus and all the remote organs of the body, through the great sympathetic and spinal nerves. The general nervous and vascular excitement so often observed in pregnant women, is evidently referrible to the immensely rapid development of the ganglionic nervous system of the uterus. The local and constitutional diseases of pregnancy demand peculiar attention, because they not only excite great suffering and danger at the time of their occurrence, but they often injuriously affect the whole process of parturition, and retard the recovery in the puerperal state. Some of the fatal accidents which have occurred during labour, especially convulsions and hæmorrhage, might have been foreseen and pre-

vented by proper treatment in the latter months of pregnancy. It is well known that the danger is far greater in the first pregnancy and labour than in subsequent confinements; it is therefore our duty to see those patients occasionally who entrust themselves to our care, whether they be rich or poor, before the commencement of labour, and furnish them with clear instructions respecting their mode of life. Great mischief may often be prevented by inculcating upon them strongly the importance of mental tranquillity, regular and gentle exercise in the open air, early rising, simple diet, and the occasional use of mild cathartics.

EXTRA-UTERINE GESTATION.

In 1650 Riolan published the history of a case in which the impregnated ovum was retained in the fallopian tube, which suddenly burst at an early period of pregnancy, and death was produced by the extravasation of a large quantity of blood into the peritoneal sac. Many cases similar to this have since been recorded, and the greater number have terminated fatally from internal hæmorrhage a few hours after the rupture of the tube. In 1830, I saw three examples of tubal gestation, in all of which death speedily ensued from the same cause. The usual symptoms of early pregnancy had been observed in all of them; and before the occurrence of acute pain in the region of the uterus, followed by faintness, coldness of the extremities, hurried respiration, and death, there was no ground for suspecting that the ovum was not contained within the uterus. In a case which occurred in 1836, and terminated fatally about the end of the third month, besides the ordinary signs of pregnancy, the patient suffered severely for some weeks with symptoms of inflammation and retroversion of the uterus. You have already seen this specimen of tubal gestation, and another which was removed from the body of a lady who died suddenly in 1829.

In neither is there a deciduous membrane lining the uterus. The opening in the coats of the tube generally, I believe, corresponds with the part where the placenta is attached; and as the blood-vessels of the tube laid open are very large, and the coats have no power of contraction similar to those of the uterus during labour, the blood continues to flow from the exposed vessels until syncope and the other consequences of profuse internal hæmorrhage take place. The tubes admit of dilatation to a certain extent in all cases, without laceration; and in some which have been recorded they have actually expanded sufficiently to contain the fœtus and its involucre at the end of the ninth month.

In a few rare cases the ovum has made its way from the canal of the fallopian tube into the muscular coat of the uterus. M. Breschet has collected together all the examples of this variety of extra-uterine gestation, which is usually called the interstitial. The ovum does not in these cases lie under the peritoneal coat of the uterus, or between the muscular coat and lining membrane, but between the layers of the muscular fibres. Five times out of seven it has been found on the left side, either above, behind, or below the entrance of the fallopian tube into the uterus, which in no case had a communication with the cavity in which the ovum was contained. The symptoms and termination of these cases have been similar to cases of tubal gestation.

In about one-half of all the cases of extra-uterine gestation which have been published, the ovum had not entered the fallopian tube, but had become attached to the ovary, or some of the abdominal viscera. The embryo has usually, in these instances of ventral gestation, been found contained in a vascular cyst, with a placenta and funis as in ordinary pregnancy. Except some peculiarly distressing symptoms experienced by the mother during pregnancy, nothing unusual has been observed till the end of the ninth month, when pains like those of labour have come on, and the movements of the fœtus have gradually ceased. In some cases, before the end of the ninth month the fœtus has died, and the uterus has shewn no disposition to contract, as in labour. The death of the mother may take place from inflammation of the parts around the dead fœtus, or she may recover after the bones have escaped, or been extracted through an opening in the abdominal parietes, or in the coats of the rectum or bladder; or the fœtus may be retained in the abdomen for many years. The cyst which contains the fœtus usually contracts adhesions with the abdominal parietes, and an effort is made by nature to expel the dead fœtus through an ulcerated opening. In the treatment of

these cases the best plan is to subdue the inflammation by leeches and other means, and when the bones approach the surface, to make an opening through the abdominal parietes, or to enlarge the natural opening in these, and extract the bones like any other foreign bodies lodged in the abdomen. Even if the diagnosis in these cases of ventral gestation were more perfect than it is, I do not think we would be justified in performing the operation of gastrotomy with the view of extracting the child alive. The following case, which is the last I have seen of this sort, may serve to illustrate the difficulty of the diagnosis, and the impossibility of rendering any assistance by art where no effort is made by nature to establish an opening in the abdominal parietes through which the fœtus may escape. A woman, æt. 35, who had been married thirteen years and had never been pregnant, ceased to menstruate in July 1840, and soon after began to have all the symptoms of pregnancy. In November, the abdomen, which had previously enlarged, diminished somewhat in size, and at the end of March 1841 she had violent pains like those of labour, with a thin red-coloured discharge from the vagina. I saw her with Mr. Pickering, of Hammersmith, on the 24th April, 1841. The areolæ were then broad and dark, and milk could readily be pressed out of both nipples, but the glands were not enlarged. A hard irregular tumor occupied the hypogastrium; but on the left side it was soft, and an obscure fluctuation was felt in this portion of it. The umbilicus was very little protruded, and there were no white lines on the sides of the abdomen. No movements of a fœtus were felt, nor any sound heard. The cavity of the pelvis was occupied by a hard immoveable mass, and the os uteri was forced up by this behind the symphysis pubis so high that it could scarcely be touched. The condition of the mammæ, and the sudden suppression of the catamenia in July 1840, without previous bad health or obvious cause, made it probable that conception had then taken place, though some of the symptoms of pregnancy were absent. She died in December 1841; and on opening the abdomen we found a large mass, like the gravid uterus in the seventh month, occupying the whole of the hypogastrium. The intestines and omentum firmly adhered to the upper part of the tumor, which felt hard in some parts, and fluctuated in others. On opening this thick cyst a great quantity of fluid, like thin pus, escaped, and a perfect fœtus of six months, with its umbilical cord and placenta. The cyst adhered to the whole of the posterior and upper surface of the uterus, which was larger than natural, and the cervix was considerably lengthened. The walls of the uterus were healthy, and

the cavity empty. How the cyst was formed I could not ascertain, nor its precise structure. It adhered so firmly to all the parts around, and they were so much disorganized by inflammation, that the ovaria and the tubes could not be distinctly seen in the confused mass, and I was unable to determine whether it was a case of ventral or tubal gestation.

The causes, symptoms, and treatment of abortion.

The ordinary term of utero-gestation is forty weeks, or two hundred and eighty days; but the contents of the gravid uterus are often expelled before the completion of the natural period, when the organs of the foetus have not been sufficiently developed to enable it to support an independent existence. The expulsion of an ovum from the uterus before the end of the sixth month, whether the foetus be alive or dead, is usually called abortion or miscarriage. When delivery does not take place till the seventh month, but before the end of the ninth month, the child being then capable of sustaining life, the process is called premature labour. There is no proper distinction between these, and it would perhaps be more correct to say that abortion took place whenever the contents of the uterus were prematurely expelled. Abortion is a frequent occurrence in the early and latter months of pregnancy, among women in all ranks of society. In the higher and middle classes it is, I believe, fully as frequent an occurrence as in females of the lower orders, who are much exposed to bodily fatigue and mental anxiety. The causes of the accident are numerous, and often extremely obscure. They have been arranged under two heads: those which depend upon the parent, on some local or constitutional disease in the mother, or on some morbid condition of the ovum, or in the contents of the gravid uterus.

All the organic diseases of the uterus may be considered causes of abortion. When the uterus is affected with cancer, or fibro-cartilaginous tumors grow in its parietes, the enlargement of the organ cannot take place during pregnancy in the usual manner, and it contracts prematurely, and expels its contents; it admits of a certain, but not of the requisite degree of development. Abortion is often one of the first symptoms of malignant disease of the uterus; and women who have in the walls of the uterus a number of fibrous tumors imbedded, as in *this preparation*, never carry their children to the full period; it cannot possibly expand so as to contain a foetus at the end of pregnancy. Tumors and cysts of the ovaria or broad ligaments, and morbid adhesions of the uterus and its appendages to the surround-

ing parts and sides of the pelvis, produce the same effect, by preventing that free expansion of the organ which is requisite during the growth of the foetus. A rigid unyielding state of the parietes of the uterus, too great sensibility and contractility of its fibres, feebleness and relaxation of the cervix, or atony of the whole organ, either from original constitution or long-continued leucorrhoea, immoderate heat of the uterus from an excited state of the nerves, and a chronic inflammatory or irritative state of its vessels, have all been admitted by the most recent authors to be frequent causes of abortion, though I think on very insufficient grounds; indeed, there is no evidence to prove that such states of the uterus ever exist during pregnancy, to produce abortion or any other morbid symptom. So far from the parietes of the uterus being in a rigid unyielding state during pregnancy, it is known that one of the first effects of conception is to render them unusually soft and vascular, and the layers of muscular fibres easily separated from one another.

When pregnant women are affected with typhus fever, scarlatina, measles, small-pox, and other acute febrile diseases, abortion not unfrequently ensues. It is difficult to determine whether this arises from the deleterious matter which enters the system of the mother passing into the foetus and destroying its life, or from the increased determination of blood which takes place into the vessels of the uterus, and the consequent detachment of the placenta. Many pregnant women affected with small-pox die in an early stage from uterine hæmorrhage, which no remedies can control. Dr. Gregory has informed me that he has seen, at the Small-pox Hospital, many female patients die in this manner; syphilis and mercury probably both act as specific poisons upon the foetus in utero, and directly destroy its vitality. Abortion has sometimes speedily followed the application of external violence, as the extraction of a tooth, or pressure of the hypogastrium, violent exercise, driving along a rough road in a carriage without springs, dancing, the employment of the warm bath, and the administration of acrid cathartics and strong emetics. Abortion has also frequently followed strong mental emotion, especially joy and fear, and violent nervous shocks of every description. Most of these causes probably act either by producing a great flow of blood to the uterus, or by irritating its nervous system, and causing the muscular fibres to contract and expel the ovum. There are some constitutional diseases in one or both of the parents, the nature of which it is difficult or impossible to determine, which have no connection with syphilis, and yet produce repeated abortion by destroying the life of the foetus.

But by far the most frequent cause of the accident is a morbid condition of the ovum itself, by which the embryo perishes, and is expelled from the uterus like a polypus, the placenta, or any other foreign body. The ovum becomes blighted, or deprived of life in consequence of the presence of some organic disease in the embryo, or its envelopes, and when dead it is usually thrown off by the uterus before the full period. This is the cause of habitual abortion in the greatest number of cases, some disease of the ovum taking place about the same period in successive pregnancies. The expression in common use, the habit of aborting, has no signification, and affords no explanation of the cause of the first abortion, or in what manner the habit came to be formed. When the embryo and involucra are healthy, they are not easily detached from the uterus, but when affected with disease, the most trifling mental emotion, or physical shock, is sufficient to rouse the uterus into action, and to excite it to expel its morbid contents. The real cause of the accident is most frequently overlooked; every thing may have been apparently going on favourably, and the occurrence is attributed to some circumstance wholly inadequate to produce so powerful an effect. Pregnant women have had the bones of the extremities fractured, and have suffered other greivous bodily injuries, without miscarriage, and there can be no doubt that criminal attempts to procure abortion are often made unsuccessfully in consequence of the difficulty which is experienced in detaching a healthy living ovum from the uterus. Mauriceau relates the history of a woman who escaped by a window from the third floor of her house when on fire, and in her fall to the ground fractured her arm, yet abortion did not follow. The case of a young woman is related by Madame Lachapelle, who threw herself into a deep pit, and suffered injuries of which she subsequently died; yet the foetus was not expelled. In several cases of distortion of the pelvis, in one which has occurred within the last few weeks, at the end of the fifth month, and in another still earlier, I have passed up into the uterus this probe-pointed silver catheter, and detached the membranes of the ovum entirely from the lower part of the uterus, yet uterine contraction and abortion did not follow, until the same instrument was re-introduced and the membranes perforated. Perforation of the membranes is invariably followed by the expulsion of the uterine contents in no long time.

The pathology of the human ovum has engaged the attention of the greater number of accoucheurs from Mauriceau to the present time, and their writings contain examples of nearly all the diseases which affect the contents of the gravid uterus at the

different periods of pregnancy. There is now before you on the table a large collection of morbid ova which were expelled in abortion before the end of the third month of pregnancy, and by examining these in detail you will soon become acquainted with all the changes of structure to which the membranes, placenta, vesicula umbilicalis, funis, and embryo, are liable. The most common morbid appearances in these ova are the following:—atrophy of the vesicula umbilicalis, thickening and induration of the placental and uterine and reflected decidua, and obliteration or obstruction of their venous canals; hypertrophy of the placenta and villi of the chorion, deposits of coagula of maternal blood in the cavernous structure of the placenta and of the chorion, which have taken place at different periods, have become in some parts white or yellow, extremely dense, and seem at first sight organized, though not really so. In some of these ova the placenta and villi of the chorion are greatly developed, and their cavernous structure completely distended with hard masses of coagulated blood. The obstruction in the veins of the placental and uterine decidua has probably been the cause in most of them of the obstructed circulation and coagulation of the maternal blood in their cavernous structure, producing what has appropriately been termed placental apoplexy, or apoplexy of the ovum. When you cut through the walls of these ova, you see nothing between the thickened decidua and chorion, but these hard irregular masses of coagulated blood, which often cause the membrane of the chorion to present a number of smooth projections inward upon the amnion. The amnion in most of them is perfect, but there is frequently no embryo contained within the amnion, and sometimes no umbilical cord. Often there is an umbilical cord of unusual length, and tightly twisted, with a few irregular tufts at its extremity, in place of an embryo. These large morbid ova constitute what some of the older authors, and also some of the more recent writers on abortion, have called moles, and which have been supposed to be formed sometimes in the uterus without conception, and to be unorganized masses. In some women these changes of structure are always observed in the ova expelled in repeated abortion, and it is often difficult or impossible to explain their cause, if it cannot be referred to constitutional diseases of the parents. I believe inflammation is rarely if ever the cause of the thickening of the membranes of the ovum, and especially of the decidua, and I am now disposed to think that the morbid alterations of structure in the placenta, observed at a more advanced period of gestation, which have been attributed by pathologists to inflammation, depend upon other causes, and that inflammation, as ob-

served in other organs, is seldom met with in any part of the human ovum, either in the early or later periods of pregnancy.

In several of the morbid ova before you, the great capacity of the amnion makes it probable that the liquor amnii before the end of the second month had been secreted in a much larger quantity than usual, and that dropsy of the amnion was the cause of their premature expulsion. In *this ovum* of three months there was a considerable quantity of fluid, like liquor amnii, between the amnion and chorion, and in others a large clot of blood has occupied the same situation between these membranes. At a later period, the presence of an excessive quantity of liquor amnii, and the over distension of the uterus, most frequently excites premature contractions.

But there is another remarkable disease peculiar to the human ovum, which sometimes commences at an early period of pregnancy, and is almost invariably followed by the destruction of the embryo, and abortion. This disease has been known from the earliest periods, and has been described under various names: as the vesicular mole, hydatid mole, hydrometra hydatica, uterine hydatids, and serous cysts of the placenta. There are several specimens of this curious disease upon the table, from which you will be able to trace its progress from the commencement in a few small cysts in the placenta and villi of the chorion, to the complete transformation of the ovum into a great mass of cysts of a very peculiar character, and which I believe are never met with in any other organ of the body, except the uterus, and never in the uterus unless conception has taken place, and only in one portion of the ovum, between the decidua and membrane of the chorion. If you look at *this specimen*, which is only a small portion of a large mass of these cysts which was expelled in the sixth month, with great hemorrhage, you will see that they are all covered on the outer surface by a thin soft yellow membrane, which is the decidua. I believe they have always at their commencement the decidua interposed between them and the uterus, but in *this specimen* of the disease at an early period a few of these small cysts are seen without being covered with decidua, and if this was not left in the uterus on their expulsion, they must have been in contact with the uterus. The presence of a few of these small cysts is sufficient to produce abortion. In *this specimen* you can see some of these cysts not larger than a pin's head, and others as large as a walnut. They have a round, cylindrical, or oblong shape, with one or more slender stalks or roots, by which they grow from one another. A large cyst has generally a number of smaller ones growing from its outer surface by several slender filaments. Cruveilhier

says these cysts are collected sometimes around a common axis, sometimes disposed like grapes, opposite to one another, or alternate at small distances; at other times they are separated by a great interval. Every vesicle has several slender roots or pedicles, some have two, others three, others four or five. Some of these are as slender as a spider's thread; at other times they are large and hollow. The vesicles, he adds, have an ovoid, spheroidal, cylindrical, or triangular form. Some have the shape of a bag-pipe, or are bicorned: they have all a reticular structure, and if an incision be made into one of them we find that its cavity is traversed by a great number of lamellæ, and white shining fibres, and divided into cells which are filled with a limpid or bloody fluid, and communicate with one another. The walls of the cysts consist of a firm fibrous tissue. The greater number, he continues, are connected with the villosities of the chorion, but there is reason to believe that as they enlarge and multiply they may perforate the decidua. I have had no time to examine these cysts with the requisite care, to ascertain whether this account of their structure be perfectly correct. Their causes and origin are still involved in the greatest obscurity; for if it be true that they invariably commence in the villi of the chorion and placenta, it is not proved that the villi are simply transformed into these peculiar cysts. Bidloo thought they originated in lymphatic vessels, and Valisneri says that he ascertained with the microscope (and you know some very strange things lately have been said to be ascertained by it), that the lymphatic vessels of the placenta, chorion, and amnion, and umbilical cord, have attached to them an infinite number of little globules which terminate at their ultimate ramifications in the same kind of structure, and he conceives that the vesicular mole is the product of these globules or pouches enlarged by diseased action. Others have taken the same view of the subject, although an absorbent and lymphatic vessel has never been seen, I believe, in the villi of the chorion. As the villi of the chorion are not blood-vessels, the hypothesis of Cruveilhier also necessarily falls to the ground. One thing, I believe, is certain, though not admitted by all writers, that this is a disease of the ovum, and that it is never seen unless conception has taken place. In all the specimens which I have examined, some fragments of the placenta have remained to prove this, and sometimes the membrane of the chorion and amnion have existed, and even an umbilical cord and embryo, as represented in this figure of Cruveilhier. A woman under the care of Dr. Seymour died some time ago in St. George's Hospital, after a mass of these serous cysts had been expelled from the uterus, and there was a true

corpus luteum in one of the ovaria, with the yellow matter outside both layers of the Graafian vesicle, as you have seen in many other preparations in which ova were contained in the tubes and uterus, or had been expelled a short time before death. Those who maintain that these cysts are sometimes formed in the uterus without conception, have not attempted to explain the manner in which they originate, nor those large single hydatids which are also reported to have occasionally been developed in its cavity, without impregnation.

Many ova are expelled from the uterus soon after the commencement of this disease, and the symptoms do not differ from those which are observed in cases where abortion results from the other changes of structure already described. It is impossible before the ovum is expelled and dissected to know the precise disease which has led to the accident, unless ova expelled before prematurely by the same person have been carefully examined, and the cause of the habitual abortion determined, and even then the diagnosis is often imperfect. Where an ovum affected with this disease is retained in the uterus till the sixth or seventh month, the symptoms during the first three or four months do not usually differ much from those of ordinary pregnancy, except that in some there is a disposition to hæmorrhage and abortion manifested. Menstruation is suppressed, the same sympathetic affections of the uterus are observed, the uterus enlarges, and its fundus about the fifth month can be felt in the hypogastrium, and the areolæa round the nipples are dark; but there is no quickening, and no movements like those of the fœtus, felt through the uterine and abdominal parietes: the uterus feels softer than in ordinary pregnancy, and the sound of the fœtal heart and uterine arteries is not heard. The os uteri is felt open, but not hard or irregular, the neck is shortened, and the body felt enlarged. The diagnosis is sometimes extremely difficult, and without carefully examining all the symptoms, and ascertaining the exact condition of the uterus, it will be impossible to avoid committing mistakes in some of these cases. Sir C. Clarke says, "hydatids of the uterus do not appear to produce any peculiar symptoms, with the exception of one, to be mentioned hereafter. The greater number of the inconveniences attending the disease arise out of the pressure made by the enlarged uterus upon the circumjacent parts, such as retention of the urine from compression of the meatus urinarius, constipation of the bowels from compression of the rectum, œdema and cramp of the lower extremities. These symptoms are not, however, necessarily present, and instances have occurred in which they have been altogether wanting. In the examination of a patient, he adds, labouring

under hydatids of the uterus, the body of the viscus will be found enlarged, and suddenly bulging out from the upper part of the cervix. All these symptoms attend other enlarged states of the uterus, but there remains to be mentioned one other symptom, which serves to distinguish this disease from all others, and from pregnancy, and this symptom is the discharge of an almost colourless watery fluid." This symptom has not been observed in any of the cases I have seen, and therefore little or no dependence can be placed upon it as a mean of diagnosis. Profuse hæmorrhage, however, has been an almost constant symptom for some time before the uterus has contracted upon its contents, and where the nature of the affection is clearly ascertained all the means in our power should be employed to bring on vigorous action of the uterus. The binder and pressure should be employed over the fundus uteri, and the ergot of rye given in sufficient doses. If these means should fail, and the hæmorrhage should continue very profuse, it might be justifiable and proper to pass the whole hand into the uterus and remove the mass of cysts. The os uteri has not, however, been in a condition to admit of the introduction of the hand, in any of the cases I have seen, and in the sixth month of pregnancy it is seldom safe or easy to pass the whole hand through the os uteri, and probably the object might be accomplished by introducing the hand into the vagina, and only dilating the os uteri with the fingers. We should trust to all the usual means for exciting uterine contractions, and checking the flooding, before recourse is had to artificial means of delivering the cysts.

The death of the fœtus in utero, and its premature expulsion, is frequently the effect of a morbid condition of the placenta. The diseases of the placenta, umbilical cord, and fœtus, and the symptoms and treatment of abortion, will form the subject of the next lecture.

COMPOSITION OF THE BILE.

To the Editor of the Medical Gazette.

SIR,

As I believe the object of your journal to be to respect truth, and record facts which will continue valuable long after names and party distinctions must cease, will you permit me to make a few observations on a subject which merits a much more extensive and rigid investigation than the mere limits of a brief notice will allow me to devote to it. On receiving your number for this week I was much gratified to find that Dr. Golding Bird has given some at-

tention to the theories which have lately been advanced intended to explain those changes which are constantly proceeding in organic life, and to reconcile some of the discrepancies supposed to exist in the phenomena resulting from the ever-changing combination of organic elements. It gave me sincere pleasure also to find that Dr. Bird has the spirit, by no means common in the present day, to acknowledge the labours and merit of his own countryman, and that the profound thought and honest researches of Dr. Prout, the father of organic chemistry in reference to its application to pathology, have again been brought to the recollection of many, who, much to their own disadvantage, have for many a year neglected them.

I must not, however, enter upon a subject which leaves room for reflection upon the honesty and self-respect of our countrymen, in giving up their just claims to the mere excitement of novelty, but proceed to correct an error which lies at the root of all investigations on a subject alluded to in the lecture before us—viz. the composition of the bile. In a former number of your journal I stated that any conclusions deduced from the constitution of the bile, as found in the ox, must be considered as a particular case; and I therefore devoted myself, first, to the investigation of the elementary structure of this secretion in the ox, which has already appeared in the *MEDICAL GAZETTE*; secondly, to the composition of the human bile; thirdly, to the composition of the bile of fishes; and fourthly, to a general comparison of the elementary composition of the bile of the carnivorous and graminivorous animals. I thus hoped to be able to furnish facts on which to found theories and deduce general laws; and by the very circumstance of publicly undertaking this extended investigation, virtually pledged myself for stating the facts of the case, whether agreeable or offensive to parties who had previously introduced their theories to the public without the necessary confirmation of facts. I state this unreservedly and without limitation, as no elementary analysis, even of the ox bile, was ever made previously to that published by me in the *MED. GAZETTE*. Subsequently to this communication opportunities have been kindly afforded me by

Prof. Cumming of finishing the analysis of the human bile, and that of one species of fish—the cod-fish (*Gadus Morrhum*), the details of which I hope shortly to have the honour of bringing before the Cambridge Philosophical Society, but which would be too long to include in this note. The examination of the bile of the carnivora is in progress. Allow me, then, sir, to state that the choleic acid of Demarçay is not the organic constituent of the bile; it is merely a part of that organic constituent; and, secondly, that the formula proposed by Liebig— $C_{76} N_2 H_{66} O_{22}$ —is not only different from the formula proposed by Demarçay, but contrary to the facts of the case, as proved by the almost identical results of Demarçay and Dumas, and utterly overthrown by the atomic weight found by Demarçay. This is a mere subject of arithmetic, which any person can test, but which, on a future occasion, I shall have great in enlarging on. And here permit me to remark, that all chemical formulæ resolve themselves into two classes; the first, in which the ratios of the respective elements, as found by actual analysis, are multiplied by the atomic weight, also found by analysis; thus giving the actual number as well as ratio of atoms entering into the composition of the body in question: the second, in which the ratios of the respective atoms have been analytically found, but in which the actual number of atoms is only a matter of induction. Now the first of these cases is a matter of demonstration; the second comes only within the range, and is subject to the laws of probable evidence. Under the first of these classes we may fairly include the analyses and formula of choleic acid, as originally published by Demarçay: the second class, with some limitation, will admit the analysis and formula of the above body, as represented by Liebig in page 325 of the German edition of his work on Chemistry as applied to Physiology and Pathology. The formula $C_{76} N_2 H_{66} O_{22}$ is not only not checked by any atomic weight, but, as above stated, is in direct variance with one already found; indeed, to any person accustomed to make organic analyses, the very numbers per cent. of the respective elements, as given by the formula, would excite suspicion, and lead to the detection of the error. I state the subject in the plain-

est possible terms, as it has been already discussed between Professor Liebig and myself during my residence at Giessen; and the only defence he is able to set up is, that the formula, as proposed by him, is expressive of no atomic weight, but merely empirical. If so, why was not the ratio of the respective elements expressed in their simplest terms? But, even then, the formula $C_{38} N H_{33} O_{11}$ does not agree with Demarçay's deduction $C_{42} H_{36} N O_{12}$; much less does it agree with the formula of the ox-bile legitimately deduced from its analysis, and which I hope shortly to bring forward; this requiring forty-eight atoms of carbon, or *ten* more than that in Liebig's hypothetical compound.

My anxiety merely to correct an error, and not to intrude unnecessarily on your pages, prevents me from enlarging on the important subject of the mode of constructing, and legitimate objects of, chemical formulæ. An honest conviction of the importance of organic chemistry in its application to physiological and pathological research must be my excuse, and will be an available one, with all estimable men, for at least an effort to check the disposition of receiving* every startling theory without that careful examination which all general principles demand.

I remain, sir,

Your obedient servant,

GEO. KEMP, M.B. Cantab.

St. Peter's College, Cambridge,
Feb. 13, 1843.

HOARSENESS TREATED SUCCESSFULLY

BY THE EXTERNAL APPLICATION OF
CROTON OIL.

To the Editor of the Medical Gazette.

SIR,

IN one of the medical journals of last week, notice was taken of a paper published in Hufeland's Journal, in which it is stated that hoarseness proceeding from laryngeal and tracheal inflamma-

tion, as well as that of an idiopathic kind caused by long speaking or singing, or that again which supervenes during fevers of a typhoid type, has been treated successfully by the external application of croton oil, by Dr. Trusen, of Posen.

My own observations, as well as those recorded by other medical authorities, are in perfect accordance with this statement; in support of which, and likewise with the view of directing the attention of your readers, I beg leave to forward to you, for publication in your valuable periodical, a few cases of hoarseness and aphonia, in which the external application of croton oil was prescribed by myself and two or three other practitioners, with a completely successful result.

A lady about 30 years of age, of an hysterical constitution, and having just recovered from a bronchitis, after riding in her open carriage against a strong wind, while conversing at the same time, became hoarse, and in a few days her voice was reduced to a mere whisper.

Tartarized antimony, calomel, &c. astringent gargles, tonica and nervina, were used without success for more than three weeks. I now advised her to have three drops of croton oil rubbed into the skin covering the larynx twice a day, until pustules made their appearance, when the oil was to be applied either once a day, or on every second day. An improvement in the voice was observed on the third day, and on the sixth it was as loud and clear as ever. No relapse occurred.

A boy, aged 11, of a scrofulous habit of body, after the suppression of tinea capitis by some nostrum, was affected with hoarseness, which in time became a complete aphonia. When I first saw the child, the affection of voice was of three and a half months' standing, during which time various domestic medicines had been resorted to by his mother, but in vain. I prescribed a blister to the nape of the neck, to be kept open; some gentle aperient, infusion of valerian, and a gargle with alum. These means, continued for more than a fortnight, producing no favourable effect whatever on the vocal organs, I abandoned them, and ordered the application of two drops of croton oil to the integuments of the larynx, as in the above case. On the

* To prevent the remotest risk of misunderstanding, I beg distinctly to state that in expressing myself thus strongly I do so without the slightest allusion to individuals, but to a general tendency too characteristic of our times, and sadly subversive of that wholesome caution so necessary in the investigation of subjects which are not capable of rigid demonstrative proof.

sixth day the voice reappeared for the first time, and on the thirteenth the child was in possession of its natural power of speech.

The celebrated tenor, Tichatscheck, when in London with the German operatic company in the year 1841, after performing a fatiguing part in "*Robert le Diable*," left the theatre in rather an excited state, and the night being damp and foggy, caught cold in returning home. When I was sent for the next morning, I found him suffering from a slight catarrhal affection, and so considerable a degree of hoarseness, that he had no command whatever over his voice, which at intervals he lost altogether. As his services were required almost every evening in the opera, he was of course anxious to have his voice restored as speedily as possible. I therefore ordered, in addition to the ordinary treatment for a common catarrh, two drops of croton oil, and one of oil of almonds, to be rubbed over the larynx twice in the afternoon, once at bed-time, and once more the following morning. At my visit early next day, the cold and hoarseness had abated so considerably, that his voice was loud and uniform, though not pure and clear. There was present a good deal of erythema of the integuments of the throat, and some oedematous swelling of the face, especially the eyelids. The oil was discontinued, spermaceti ointment applied to the erythematous parts, and a brisk cathartic prescribed; after the action of which the swelling of the face entirely subsided in the course of the day. On the third day his voice was completely restored to its natural purity and clearness, and he felt himself able to sing again that evening in the above-named opera, which he did with much *eclat*, and, as he told me, ease to himself, and without any subsequent access of hoarseness. He was delighted with the remedy that had removed an evil of such magnitude to him in so short a time, and declared this oil to be a remedy of the utmost importance to singers, and that he should therefore take great care not to lose the prescription.

In a fourth case, where, in a young, timid, and very irritable female, aphonia ensued instantly after fright, the external application of croton oil was had recourse to immediately, and con-

tinued for a week, when, as there appeared no sign of the power of articulation returning, I ordered an emetic; after the operation of which the natural voice came back almost as quickly as it had been lost.

Dr. Mankiewicz* attended a young person who was affected with a considerable degree of hoarseness after an attack of bronchitis, against which various remedies had been tried in vain for a long time. He ordered the external use of croton oil once a-day; and after the third application the voice was vigorous and clear as before the bronchitis.

Dr. Romberg† gives the case of a fisherman, aged 34, who, by frequent exposure to wet and cold, had gradually contracted an aphonia; to cure which a variety of remedies had been tried without the slightest effect. The aphonia was of one and a half year's standing, when Dr. R. advised the external application of croton oil. After the oil had been used for 22 days, the patient was able, for the first time, to speak a few words aloud; and, from the period of this improvement, he slowly but perfectly regained his natural voice.

A young lady, 18 years of age, who had exposed herself, when heated, to a cold draught of air, became affected, first with hoarseness and then aphonia. Dr. R. had attended her for this malady for seven weeks without success, when he was induced to order the external use of croton oil. On the third day the voice began to appear again, and in a few days afterwards was quite re-established. Andral‡ also employed croton oil in several cases, where the aphonia had resisted all other known means, with perfect success. He directed frictions to be made with it in front and at both sides of the neck.

The cases above related are, perhaps, too few in number to justify the supposition that croton oil, in curing hoarseness and aphonia, acts not only as a counter-irritant, but has also some specific action on the pneumogastric nerves, especially the laryngeal branches. In those cases which fell under my own immediate observation it exerted no laxative effect upon the bowels. This oil not unfrequently produces a good

* Vereinszeitung, 1843. No. 13.

† Casper's Wöchenschrift, 1835. No. 15.

‡ Diet. de Med.

deal of cutaneous eruption, which is apt to spread, and, in very delicate persons, may affect the general system. It ought, therefore, to be applied only to a very small surface of the skin, and in quantities of not more than from two to five drops at a time.

I am, sir,

Your obedient servant,

A. FRANZ, M.D.

6, King's Road, Brighton,
Feb. 18, 1843.

ON THE
CIRCULATION IN THE CAPILLARY
BLOOD-VESSELS,
AND ON
SOME OF ITS CONNECTIONS WITH
PATHOLOGY & THERAPEUTICS.*

By JOHN SNOW, M.R.C.S.

(For the London Medical Gazette.)

The heart not the only cause of the circulation.—The various functions assist the capillary circulation.—Circulation in plants—in the more simple animals—in asphyxia.—Contraction of vessels does not assist the circulation.—Diapnoets, or medicines which promote respiration.—Cutaneous transpiration.—Inflammation.

THE blood, after leaving the left ventricle of the heart, passes through tubes which divide and subdivide until they become of microscopic smallness, before they re-unite to convey the blood to the right side of the heart; whence the whole of that fluid has again to pass through a similar arrangement of vessels in the lungs, before it reaches the point from which we set out. It is in the minute branches that all the changes in the blood, and the reciprocal changes between that fluid and the rest of the organism, take place; the heart and larger vessels merely serving the mechanical purpose of transmitting the blood. These ultimate or smallest branches, which have obtained the name of capillaries, seem, in most of the tissues of the body, quite distinct in arrangement and appearance from the arteries which bring the blood from the heart, and the veins which return it to that organ. Viewed

by the microscope, they are seen to be of equal diameter throughout, intercommunicating with each other so as to form a net-work, and forming a union between the arteries and veins, but having no other openings or communications with any other parts.

There is considerable diversity of opinion with respect to the forces which circulate the blood. Many physiologists of great eminence maintain that the contraction of the ventricles is the sufficient and sole power which forces the blood through the capillaries and back again to the heart; whilst others are of opinion that various causes assist the heart to propel the blood through the vessels. I feel convinced that, besides the action of the heart, there is one other power of importance engaged in the circulation of the blood, a power which has been suggested and described with more or less of distinctness by Dr. Allison, Baumgartner, Koeh, Dr. John Reid, and, I believe, other authors, but has not yet received that general assent, or even consideration, which it deserves. The opinion to which I allude I will define as follows:—that the mutual changes which take place at the capillaries, between the blood and the tissues, are attended with attractions and repulsions which assist to impel the blood in a definite direction. Some of the fluid part of the blood is continually passing through the invisible pores of the capillary vessels to nourish the surrounding solids, whilst, at the same time, a fluid, containing in solution the tissues decomposed in supporting the vital functions, enters the capillaries from without: in various parts exhalation and imbibition of liquids and gases are going on, and in others special secretions are separated from the blood. The opinion, then, which I advocate is, that all these actions assist the circulation of the blood; in short, that every function promotes the capillary circulation of the part in which it takes place.

Towards establishing these views, I shall first shew that the causes to which I have alluded are alone sufficient to move a nutritious fluid in capillary tubes.

The isolated cells of chara, and of most simple vesicular plants, are filled with a liquid which contains globules visible by the microscope. These globules move round in their respective

* This article has been selected and re-arranged from two papers read by the author at the Westminster Med. Soc. on Jan. 21st, and Feb. 4th.

cells, each cell having a separate circulation of its contained fluid. There is no contraction of the walls of the cells, and, indeed, there is no conceivable cause for this circulation, except the process of nutrition going on in the cells. In the higher plants, in which the sap moves in capillary tubes and spaces, there is no contraction of the vessels, nor any other mechanical force, to cause the circulation. Absorption by the spongioles of the root can raise the ascending sap to a limited extent only; when the root is cut off, and the stem put in water, part of the water is raised into the plant; and, indeed, the ascent of the sap may be observed in spring to commence first at the buds, the fluid lower down afterwards following: it follows, then, that the functions going on in the leaves are the chief cause of the ascent of the sap. In the leaves the course of the fluid is changed, and the elaborated sap returns towards the root, nourishing the plant, and forming various secretions in its course; and this course is not always a descending one, for in a great portion of many plants the returning sap has to travel in opposition to the force of gravitation. It is evident, therefore, that the circulation through the leaves, and back again towards the root, is accomplished by the exhalation and imbibition of the leaves, the change of composition and other functions performed there, and by the nutrition and secretion taking place as the sap returns—by some or all of these functions—since there are no other causes, except, indeed, capillary attraction, which cannot cause the circulation, but only aid it to a small extent.

In many species of the lowest tribes of animals, the circulation of the blood which takes place in capillary tubes is independent of contractions and all mechanical forces, and must arise from the functions taking place in the vessels: for instance, the trematoda, an order of intestinal worms, possess two vessels on each side of the body, in which the blood moves in opposite directions; and, according to the observations of Ehrenberg and Von Nordman, these vessels do not contract in the least. The greater number of animals in the lowest classes have, it is true, some vessels which contract; but these contractions are often very feeble compared to the extent and vigour of the

circulation. The motion of the ambient liquid over the surface and through the canals of sponges, likewise tends greatly to strengthen the views under consideration; for since no contractions or ciliary motions can be detected in these beings, the currents must be caused by the nutrition, respiration, and other functions taking place on the surfaces of the sponge. And it may be mentioned here that when development first commences in the higher animals the circulation is independent of any mechanical impulse: it has been clearly shown by Von Baer that the blood is formed before the vessels, and that its first motion is towards the heart, and not from it.

The next point in this inquiry which I shall take up, will be, to ascertain whether the action of the heart is of itself sufficient to effect the circulation; and it is only necessary to pay attention to the phenomena of asphyxia to perceive that it is not. When those changes in the blood which take place at the lungs are prevented by stopping the access of oxygen, the passage of blood through the lungs is at once greatly diminished, and is shortly arrested, whilst the heart continues to act some time longer. It matters not whether the lungs are collapsed or distended, or whether the respiratory motions are continued or not; if the characteristic change in the blood is prevented, the right ventricle of the heart is unable to propel the blood properly through the lungs. There is no mechanical impediment, the blood is not coagulated, as the fact of recovery, if the cause of asphyxia be timely removed, proves; the only conclusion, then, is, that the change in the blood from venous to arterial being necessary to its free passage through the lungs, this change must generate forces which assist its passage. In his experiments on asphyxia in dogs, Dr. John Reid* found, by the aid of M. Poiseuille's instrument, the *hæmadynameter*, that during the first moments of asphyxia the pressure in the systemic arteries was increased, and consequently that there was obstruction in the capillaries of the general circulation: from which it appears that the small quantity of blood which does pass through the lungs, being but little altered from its

* Edin. Med. and Surg. Journ. No. 147.

venous state, is not fitted to undergo those opposite changes which take place in the body at large; and the left ventricle is but ill able to propel it through the capillaries for want of the auxiliary forces arising from those changes.

On the other hand, a circulation sufficient to support growth and formation of parts to a considerable extent, may be maintained without the assistance of the heart. The proof of this consists in the existence of human acephalous monsters without heart, many of which have been developed in a uterus which contained no other fœtus at the same time, the contraction of whose heart might be supposed, by a union of the placental vessels, to aid the circulation; and in these cases there was consequently a double capillary circulation, the placental and general one, both independent of a heart. In one remarkable case related by Emmert, the uterus merely contained a limb attached to the placenta by a funis.

That other agencies are at work, assisting or controlling the circulation, is evident from a single fact, admitted, I believe, by all recent observers with the microscope, viz. that the colourless corpuscles of the blood do not move through the capillary vessels with the same speed as the red globules, but roll slowly along near the sides. And to complete the proof of the opinion with which we set out, it is only necessary to shew that there are no other causes which can assist the heart to move the blood besides those we have stated.

Many authors, perceiving the immense force that would be required to impel a fluid through such small tubes as the capillary blood-vessels; considering the portal circulation, where the blood is collected from these minute vessels and again passes through a similar set before it returns to the heart; considering the circulation in fishes, in which the blood all passes through the capillaries of the gills, and afterwards through those of the system, before it again reaches the heart; and considering, likewise, the circulation of monsters without hearts, and perceiving difficulties in all these and other considerations, have admitted the inability of the heart to circulate the blood, but have suggested contractions of the capillary vessels, or of the arteries, as the

forces which assist the circulation. Now contraction of the capillaries would impede the entrance of blood into these vessels as much as it would facilitate its exit on the other side; and consequently could be no assistance to the circulation—unless, indeed, it were, as Mr. Julius Jeffreys suggests (*MED. GAZ.* March 18, 1842), a vermicular contraction; and that no such contraction as this exists is evident on observing the capillary circulation with the microscope. The same is true of the arteries; the pulse proves that there is no vermicular or progressive contraction in them, and any other contraction would resist the action of the heart quite as much as it could assist the flow of blood towards the veins. The elasticity of the arteries modifies the impulse of the heart exerted on the blood, and causes its current to be continuous; whereas if it had to pass through rigid tubes it would stop between each stroke of the heart. But this elasticity can apply no additional power to the circulation; it only acts the part of a regulator of the motion. The arteries, in addition to their elasticity, which continues after death, possess a tonic or vital contractility, which enables them to accommodate themselves to the altered quantity of blood and to different states of the circulation. This contractility I believe to be under the influence of that system of nerves which accompanies the arteries everywhere and is distributed to their coats,—I mean the ganglionic system, or great sympathetic,—and I consider that it has great influence over the quantity of blood which reaches different parts, and over the state of the circulation, both in health and disease; but it cannot assist the circulation by adding any power to it; it can only modify the application of other forces. The capillaries themselves can alter their size, and thus modify the circulation which they cannot assist; they do so on the application to them of various medicinal and physical agents.

Direct observations made with the microscope favour the doctrine I advocate, since Spallanzani and many later physiologists have seen the blood move in the capillaries of the frog for a length of time after the removal of the heart; and I conceive the conclusion to be drawn from these observations cannot be weakened by the negative

evidence of others, who have observed the blood not to move under similar circumstances.

There is an experiment by Magendie to which it will be well to allude, since it is considered by that eminent physiologist, and many others, to amount to a proof that the heart's action is the sole cause of the motion of the blood in the veins; but a careful examination of that experiment will shew that it is not unfavourable to the views here entertained, and that, at the utmost, it only proves, what no one would attempt to deny, namely, that, when the blood is prevented from reaching the capillaries, it cannot flow through them. The following is an account of the experiment in the author's own words. "After having passed a ligature round the thigh of a dog, as I now described, that is, without including the crural artery or vein, apply a ligature separately upon the vein near the groin, and then make a slight opening in this vessel. The blood will immediately escape, forming a considerable jet. Then press the artery between the fingers to prevent the arterial blood from reaching the member. The jet of venous blood will not stop on this account; it will continue some instants; but it will become less and less, and the flowing will at last stop, though the whole length of the vein is full. If the artery be examined during the production of these phenomena, it will be seen to contract by degrees, and will become completely empty. The blood of the vein then stops; and at this period of the experiment, if you cease to press the artery, the blood injected by the heart will enter, and as soon as it has arrived at the last divisions it will begin to flow again at the opening of the vein, and by little and little the jet will be established as before." The movements of the chest in respiration give a little assistance to the return of blood to the heart; but it is only on the large veins in the immediate vicinity of the chest that these movements can have any influence; in natural respiration this influence is very small, and under no circumstances can it extend to the capillaries; therefore it need not occupy much attention in this paper.

I have now, I think, considered this subject in all its bearings, and have, I trust, proved that the heart, although, undoubtedly, the chief cause of the cir-

culution, is yet materially assisted by other forces situated at the capillaries; not by any contractions of these vessels, or by any other mechanical power, but by forces arising out of the functions in the capillaries and in their immediate vicinity. I have nothing to advance respecting the intimate nature of the attractions and repulsions which accompany the changes of composition at the capillaries, and which tend to move the blood in a definite direction. I have carefully avoided such terms as chemical, electrical, and vital, both in order that I might not be misunderstood, and because I look upon chemical affinity, electricity and vitality, rather as expressions which are useful to us in the infancy of science than as forces which have a separate and defined existence. Our ignorance, however, of the ultimate cause of these attractions is no argument against their existence; since we admit many laws in science of the causes of which we are ignorant.

The views of the circulation entertained in this article will enable us to explain many phenomena in physiology and medicine which would otherwise be a mystery; of which I will give two or three examples. *Assafoetida*, *aether*, various essential oils, camphor, and other volatile medicines, relieve difficult and impeded respiration; they are sometimes called antispasmodics, but they give relief in various cases of obstructed pulmonary circulation when no spasm is even supposed to exist, and I do not know by what *modus operandi* they can be beneficial except by one in accordance with the above views of the capillary circulation. They are all separated from the blood in the lungs and escape with the breath; they leave the lining membrane of the air-cells in the gaseous form with the carbonic acid gas and watery vapour, increasing very much the quantity of vapour which exhales from the pulmonary capillaries, and thus give additional impetus to the blood; in this way lessening congestion and relieving its attendant distressing symptoms. As this class of medicines promote the function of respiration I will venture to call them diapnetics, from *δια* and *πνεω*. To call them expectorants would not be correct, as expectoration is not respiration. As the greater number of diuretics are voided with the urinary excretion, the above class of medicines resembles them

in this respect, since they pass out of the body with the excreted carbonic acid gas and aqueous vapour. A dry atmosphere gives relief in some forms of asthma; it promotes the excretion of watery vapour, and acts in the same way as the above medicines.

MM. Breschet and Becquerel have recently found that on applying impermeable substances to the skins of animals, and thereby preventing the cutaneous transpiration, the animals gradually decreased in temperature, and appeared to die of a kind of cutaneous asphyxia. I do not know that these gentlemen have offered any explanation of this circumstance, and I do not see that it is capable of any, except that afforded by the views which it is the object of this paper to support. Exudation of water and watery vapour being one important function of the skin, it follows that, this being stopped, the cutaneous circulation is slackened, and along with it the other functions of the skin, the most important of which is the evolution of caloric. We need not expect sanguineous congestion of the skin under these circumstances, since there are plenty of other channels for the blood; the skin being in this respect very differently situated from the lungs. The evaporation of the cutaneous transpiration is attended with the abstraction of caloric, and this evaporation can preserve the body under extraordinary circumstances from being raised above the temperature compatible with life; as, I believe, was first shewn by Franklin: but we learn from the experiments of Breschet and Becquerel that, under ordinary circumstances, the cutaneous transpiration is the cause of a generation of caloric much more than sufficient to overbalance the abstraction of heat arising from its own evaporation. Dr. Willis has been good enough to direct my attention to a note to his translation of Wagner's *Physiology* in which he states his opinion that one use of the cutaneous secretion is to assist the capillary circulation. That such is the case, and that the fall of temperature in animals experimented on by Breschet, was the direct effect of the arrest of transpiration from the skin, and not a consequence of some injury to the system at large, I satisfied myself by folding one of my arms in oil-skin under the usual clothing; for I experienced a sensation

of coldness all the afternoon it was applied, and on its removal the arm was found to be evidently colder than the other. It is generally taught that in fever with a hot and dry skin there is diminished cutaneous transpiration, but, reasoning by analogy from the above facts, we may conclude that such is not the case, and that the secretion from the skin is at least equal to, if not greater than, what it is in health; and, that such is really the case, a little consideration will prove; for the patient drinks a good deal, voids but little urine, does not increase in bulk, but, on the contrary, gets thinner; therefore, there must be increased evaporation from the skin and lungs, for which the elevated temperature of the body is sufficient cause. The heat of the surface, which is sometimes considered as a consequence of diminished evaporation, accounts satisfactorily for the dryness of the skin, where the cutaneous secretion is not very great indeed, by the increased rapidity of evaporation it must produce. The moisture of surface produced by antimony and some other diaphoretics, I conceive, arises from the property these medicines have of reducing the temperature of the body, and not from increased determination to the skin. I admit that this position respecting the perspiration in fever requires to be proved by experiment; but in the meantime, I feel so satisfied that the evaporation from the lungs, which is confined by physical laws, cannot be sufficient to dispose of all the supplementary fluid, that I have no doubt, in my own mind, on the point.

The above views of the circulation afford, I think, a better explanation of the phenomena of inflammation than do any other. Increased function, which, according to these views, necessarily accelerates the circulation of a part, may lead to inflammation; as, where excitement of the passions of the mind causes phrenitis, or, where the intensity, or long-continued application of light causes, inflammation of the eyes: now, according to Dr. Kaltenbrunner and other eminent microscopical observers, the velocity of the capillary circulation is greatly increased in the early stages of inflammation. All observers, I believe, agree that the capillary vessels of an inflamed part are increased in size, or dilated: and

some authors, who consider the heart's action the only cause of the circulation, say that the current of blood through an inflamed part must be retarded in proportion to the dilatation of the capillaries, since when a liquid is forced through a tube having one portion dilated, its motion is slower in the dilated portion. Were the contractions of the heart the sole cause of the circulation, this would be so, but then the temperature of inflammation would be the normal temperature; and if this disease consisted in a stoppage of the capillary circulation, as other authors say, then an inflamed part would be colder than the others: for whether we consider that the blood merely warms the body by distributing heat which it acquires from some internal source, or whether we adopt the view, which has been proved by various facts, that animal heat is chiefly evolved in the systemic capillaries, where the arterial is changed into venous blood; still, to account for the elevated temperature of inflamed parts, the passage of an increased quantity of blood through the vessels is necessary, since the external air and contiguous bodies are constantly conducting away the heat. One function, to which the capillary circulation is subservient, is the maintenance of sensibility; and when the circulation is accelerated to the amount of active inflammation, the sensibility of the inflamed part is increased into pain. The pain in this disease, I think, is generally in proportion to the natural sensibility; those parts which are most sensible in health being most painful in inflammation. It is probable that there are no living parts that have not an obtuse sensibility, although they may usually not have the opportunity of evincing it: thus, an alimentary bolus is generally not felt after it is swallowed; but if it be unusually hot or cold, or harder or larger than common, it may be felt all the way down the œsophagus till it reaches the stomach.

The small arteries of an inflamed part become dilated as well as the capillaries, and often, also, the arteries leading to the part. This dilatation of the arteries cannot be explained on mechanical principles, and must consequently depend on the nerves; most likely on the branches of the great sympathetic. Those who say that in-

flammation consists in obstruction of the capillary circulation, argue that this obstruction is the mechanical cause of the dilatation and increased pulsation of the arteries; but obstruction could have no such effect unless it existed in all the capillaries of the system at once, as in asphyxia; for the pressure of the heart's action is exerted on all the arteries alike, and if the circulation were obstructed in one part, the blood would find an easy passage through others. Moreover, the compression of an artery causes no such dilatation and pulsation above the compressed part as those of inflammation. The dilatation of the small arteries accounts sufficiently for the throbbing of many inflamed parts. In the state of health, the wave caused by the heart's impulse is stopped some distance before it reaches the capillaries; but in inflammation, the small arteries become so much enlarged, that the undulation caused by the heart's action reaches completely to the capillary vessels; and from the number of these arteries a pulsation is produced equal to that of a large artery in the normal state.

That inflammation is something more than an altered condition of the capillaries, or a loss of balance between these vessels and the heart, is proved by the fact, that the cornea, various articular cartilages, and other structures which contain no vessels of any kind, are subject to this disease. Inflammation is a diseased process going on between the solids of the inflamed tissue and the blood circulating through it, or near it; and we find that this process has a tendency to change the structure and composition of both the solids and the blood; for there is good reason to conclude, from some observations made by Mr. Addison and others, that the increased formation of fibrine, in this disease, takes place chiefly in the inflamed part.

When inflammation proceeds so far as to produce disorganization of any kind, the circulation generally, I believe, becomes interrupted. But it is not my intention to enter at length into the subject of this disorder: I shall only make a few remarks on one or two points in the treatment before I conclude. According to the above theory of the circulation, it is very clear how perfect rest from the func-

tions of an inflamed organ, when it can be obtained, should greatly promote the resolution of the inflammation. The beneficial effects of local blood-letting are likewise apparent; for if the functions of an organ assist the circulation through it, when these functions are lowered by the abstraction of blood from the part, the capillary circulation cannot regain its wonted velocity unless some cause exist, or come into operation, to re-excite the morbidly increased functions of the part. On the other hand, if the circulation depended entirely on the *vis a tergo*, it is not evident how blood-letting from the vessels of the diseased part, or those in its immediate vicinity, could do more good than the removal of the same quantity of blood from any other part of the body.

From what I have said respecting the effect of the cutaneous secretion on the capillary circulation, it follows that inflammation of the skin ought to be relieved by stopping the transpiration from the inflamed part; and this is an indication which may be fulfilled with safety and advantage in every case of inflammation on or near the surface. I believe it is on this principle that the benefit of water-dressings and poultices chiefly depends, as well as of lunar caustic and of flour to erysipelas; the former making a dead, and in a great measure impermeable membrane of the cuticle, and the latter likewise interfering with transpiration. The effects of stopping the exudation from the skin seem to reach some depth below the surface; for covering the mammary glands with large adhesive plasters is the most successful means I know of putting a stop to the secretion of milk, and thereby preventing the ill effects which might arise from its congestion in these glands.

Whilst, as was stated before, a dry atmosphere ought to give relief in asthma with passive congestion of the lungs, in inflammation of these organs the most suitable atmosphere should be one so charged with moisture that it can take up no more; and such an atmosphere is recommended by Mr. Jeffreys (MED. GAZ. Feb. 18, 1842), though on different principles, and has been found by him to be beneficial.

These are but a few of the subjects in medical science which are capable

of receiving illustration and explanation from the above views of the capillary circulation; for one truth must always harmonize with all others.

Frith Street, Soho Square,
Feb. 13th, 1843.

ON A SINGULAR CARDIAC YELPING OR HICCOUGH SOUND,

WITHOUT VALVULAR DISEASE OR
OBVIOUS ORGANIC LESION.

BY D. MACLACHLAN, M.D.

Physician to the Royal Hospital, Chelsea.

(For the Medical Gazette.)

THE efficient causes of the various persistent valvular murmurs are generally very evident, and, in the greater majority of cases, recognisable during life; yet even these murmurs sometimes occur without post-mortem examination revealing their origin. It is, however, in another description of cases that we more frequently meet with cardiac murmurs, unaccompanied with appreciable organic disease. In anæmia, chlorosis, and in nervous hysterical females, the bruits may be loud, distinct, persistent, or only occasional, simulating valvular obstruction, or permanent patency of the aorta, &c. leading an incautious observer to an unfavourable prognosis; yet, in a few weeks these signs have wholly disappeared: the patient has gradually improved, and with returning health the murmur is heard less frequently, less audibly, and at length ceases. Nor, under other circumstances, has there been any organic lesion sufficient to account for the abnormal sound.

Puzzling as these cases undoubtedly are, and with a perfect knowledge of their frequency, I was wholly unprepared for the result observed in a case which has recently been under my care in the infirmary of this hospital, in which a very remarkable, loud, sharp, yelping sound accompanied the systole. The case attracted much of my attention; and the following brief details will be interesting to the cultivator of physical diagnosis:—

CASE.—An in-pensioner, 62 years of age, hemiplegic for upwards of two years, and for the whole of that period subject to symptoms indicating organic disease of the brain—headache, pro-

gressive decay of the mental faculties, and gradual extension of the paralysis to both sides of the body, with relaxation of the sphincters—became bed-ridden about three weeks before his death, which happened on the 25th January last. He lay in a lethargic semi-comatose state, and was incapable of comprehending questions.

During the last week of his existence the heart's action became inordinate, and both sounds were accompanied with a bruit de soufflet, audible only in the præcordial region. On the 21st of the month, four days before death, the following is the report I made of the physical signs; and as they interested me much, I made repeated examinations at various hours, and always with the same result, the sounds only varying in degree with unknown circumstances:—

“Percussion unusually clear in præcordial region. Heart's action violent, but regular in its beats; impulse seen as well as felt. Both sounds are accompanied with a bruit de soufflet, more intense with the first. There is a most peculiar, short, clear, abrupt, barking sound occasionally heard, having its greatest intensity immediately behind the nipple, and extending but a very little way on either side of this. This sound bears a remarkable resemblance, in fact it is identical, to the yelping of a very young whelp; it commences with the first sound, intermits about every third or fourth beat, and is instantaneous, ceasing immediately it is produced. When loudest it can easily be heard by the ear a little removed from the end of the stethoscope. There is no fremitus, and the bruits are not audible in the larger arteries, nor beyond the præcordial. The man seems to suffer no pain: pressure underneath the left ribs, in the direction of the heart, is borne without shrinking, and does not affect his breathing. Pulse small, weak, and regular.”

Scarcely any change took place in these signs up to the termination of the case, with this exception, that as the heart's action became feeble, the peculiar yelping sound diminished in intensity, and recurred with less frequency.

Anatomical appearances 48 hours after death.—It was my intention, in narrating this case, to have omitted the

post-mortem appearances observed in the head: but as they were interesting, I may as well complete this part of the history of the case by inserting them.

Head.—Copious sub-arachnoid effusion over both hemispheres, and rather more than two ounces of serum at the base of the brain. The whole of the veins ramifying on the surface, and dipping into the convolutions, were opaque, of a milky colour, and mottled from fibrinous depositions on their internal surfaces, plugging up the vessels, and resembling precisely the appearance frequently observed in the cerebral arteries of the aged. The veins were tenacious, and easily torn from their attachments in large bunches. Both lateral ventricles were filled with clear serum. The tela choroidea was blanched, and without any of the changes observed in the superficial veins. The substance of the brain and cerebellum appeared healthy, of natural consistence and vascularity. The branches of the internal carotids and vertebral arteries were somewhat firmer than usual, but without osseous or atheromatous depositions.

Chest.—Lungs free from adhesions, collapsed; presented a dark mottled aspect, like Aberdeen granite. Substance of each healthy, and there was no fluid in either cavity of the chest.

Pericardium.—This membrane, preternaturally thin and dry, was quite transparent, contained less than half a drachm of clear serum, and was free from roughness or any sign of recent or former inflammation. The sac was of natural size, presenting a striking contrast to the heart. Unusually small and firm, this organ scarcely equalled in bulk an ordinary orange. Its veins were minutely injected. The left ventricle exhibited a beautiful specimen of concentric hypertrophy, the walls exceeding an inch in thickness, and the cavity hardly admitting a common nutmeg. The other ventricle, though also contracted, was more natural, and the valves of all the cavities as well as of the arterial trunks presented nothing peculiar. The endocardium and the internal surface of the arteries was sound. There was scarcely any blood in the heart: in fact, it was empty, and without clots.

REMARKS.—The very peculiar yelping cardiac sound remains unexplained

by the post-mortem examination. There was no obstruction in any of the orifices, and the endocardium retained its normal appearance. There may, however, have been spasm of one or other of these orifices during life, offering temporary obstruction; or one or more of the columnæ carneæ may have acted in such a manner as to have altered the relative position of the valvular apparatus between the auricles and ventricles, causing an impediment of longer or shorter duration, or irregular action of these valves: and recollecting some theories of the production of the sounds of the heart, it is not difficult to conceive how this irregularity of action would occasion an unnatural sound. The disproportion between the size of the pericardium and heart renders it very probable that the diminished capacity of the left ventricle was recent, and may even have partly occurred during the last struggles. The unusually thin and dry state of the pericardium could scarcely have occasioned the abnormal sound. There was no sound of friction, indeed nothing to produce it, and had this condition of the pericardium been the cause, the sound would have been double "to and fro," prolonged and consistent, not occasional.

Whatever may be the efficient cause, the sound must be rare. I remember, however, a distinguished physician, and an accomplished auscultator, attached to one of the hospitals in Dublin, telling me in 1838 of a case then under his care in that hospital, in which this yelping, barking sound was present. He had not heard it before, and what became of the case I know not. His tact and opportunities are great, and should he have met with it since, his opinions on the subject would be valuable. Without adopting a French term, this sound might be designated "the yelping or hiccough sound;" either at once conveying its precise character.

CASE OF ALBUMINOUS URINE.

By JOHN PERCY,

Physician to the Queen's Hospital, Birmingham.

(For the *London Medical Gazette*.)

WILLIAM BEESON, æt. 8, was admitted out-patient of the Queen's Hospital, February

10, 1842. He has a ruddy complexion, dark eyes, and brown hair. During the last three months he has been employed in a brass foundry. He has always enjoyed good health. Last July (1841) he fell into the canal, and, about three weeks afterwards he became affected with earache, which has ever since continued in a greater or less degree. No discharge from the ears has been observed. Three weeks ago, his mother began to observe puffiness of the cheeks and under the eyes, and a general œdematous state of the body and limbs, which symptoms still persist. The anasarca has an elastic character, the pitting produced by pressure soon disappearing. He complains of tightness of the chest and slight dyspnoea, which is not attended by cough. The respiratory murmur and sounds of the heart are natural. During the last month he has suffered in the morning from headache, and pain referred to the eyes and ears, especially the right eye and right ear. Of late he has been accustomed to rise once or twice in the night in order to pass urine. Dejection of spirits; appetite good; no abdominal tenderness; pain across the loins; pulse 92 (standing), of moderate strength; tongue clean; bowels generally regular; a few ascarides have been observed. The examination of the urine, which contained albumen, is detailed in the sequel.

℞ Hydrargyri c. Cretâ, gr. iij.; Pulv. Rhei, gr. v. M. ft. Pulvis, Mitte, vj.; tales et capiat j. omne nocte.

℞ Cambogiæ, gr. v.; Potassæ Bitart. ℥j. M. ft. Pulvis Mitte, vj.; tales et capiat j. p. r. n.

℞ Potassii Iodidi, ℥j.; Potassæ Bicarb. ℥ij.; Aquæ f. 3viij. Solve, ft. mistura capiat f. 3j. ter indies.

Under this treatment considerable improvement soon ensued, the anasarca disappeared, and the proportion of albumen in the urine was much diminished. After the lapse of a few weeks I lost sight of the patient, whom the mother reported convalescent.

Feb. 12.—Examination of the urine: colour, pale straw; acid; without sediment; mucous cloud; sp. gr. 1027°.

Analysis of 1000 grains.

Water	935·8
Urea	16·68
Animal matter	16·52
Albumen	11·4
Alkaline chlorides	8·6
Alkaline sulphate, phosphate, and carbonate	6·4
Earthy phosphate	0·2
Loss	4·4

1000·00

The alkaline carbonate was doubtless derived from the albumen, of which the organic part was destroyed by incineration. The urine, from which the quantity of urea was ascertained, was evaporated over strong sulphuric acid, under the receiver of the air-pump. The residuum, which had a pale brown colour, was well washed with rectified spirit; and to the syrup left by evaporation of the spirituous solution, nitric acid slightly diluted was added in excess. The mixture was stirred, and left until the following day, when the nitrate of urea, after having having been carefully drained by pressure in calico, was transferred to a watch-glass, and allowed to dry in a warm situation over the sandbath for twelve hours; until, indeed, it ceased to lose weight.

Now, on comparing this analysis with that of healthy urine by Berzelius (*vide* *Traité de Chimie*, t. 7, p. 392-3), it will be found that the sum of the weights of the urea and albumen in the former nearly amounts to the weight of urea in the latter, the difference being 2·02. The proportions of water, of animal matter, and of fixed salts, in Beeson's urine, nearly equal the proportions of these respective ingredients in ordinary urine, according to Berzelius.

	Beeson's Urine.	Berzelius' Analysis.
Water	935·8	933·0
Urea	16·63	30·10
Animal matter	16·52	17·14
Fixed salts	15·2	16·91

The biphosphate of ammonia, mentioned in the analysis of Berzelius, has been excluded from the fixed salts.

All the albumen in Beeson's urine was not coagulated by heat; for after filtration of the boiled urine copious precipitation of white flocculi was occasioned by the addition of nitric acid. Hence, it is probable that a portion of the albumen existed in the state of albuminate. 500 grains of another specimen of Beeson's urine, sp. gr. 1017°, afforded by heat alone two grains of albumen, and by heat and nitric acid, 3·9 grains.

Feb. 17.—Urine passed Feb. 16; sp. gr. 1020°, temp. 54° Fah. After boiling, and when cold, sp. gr. 1019°, temp. 56 Fah. 500 grains evaporated to dryness, and well washed with boiling distilled water, left 1·4; and the same quantity of urine, evaporated and

washed with boiling water, acidulated with nitric acid, left 2·1 grains. Doubtless a minute proportion of acid remained attached to the coagulated albumen.

Feb. 22.—Colour, pale straw; slight mucous cloud; highly acid; sp. gr. 1016°, temp. 52° Fah. 500 grains evaporated over steam-bath left 16 grains: the accuracy of this result was confirmed by another similar evaporation. The residuum, well washed with hot distilled water, acidulated with nitric acid, left 1·1 grain. 500 grains, evaporated under the receiver of the air pump over strong sulphuric acid, furnished 18 grains.

March 1.—The appearance of the urine was similar to that of the former specimens; sp. gr. 1015°, temp. 56° Fah. 500 grains evaporated over steam-bath left 17·5. Residuum, after well washing with hot water, acidulated with nitric acid, furnished 1 grain. 500 grains also contained 9·8 of urea.

OBSERVATIONS.—Now, the first question which naturally arises in connection with the case is, whether the symptoms detailed were dependent upon granular degeneration of the kidneys in the early stage. If they were not dependent upon this cause, how, it may be asked, can granular degeneration in this stage be detected? The specific gravity of the urine, it is true, so far from being less, was even greater than that of healthy urine. However, on the authority of Dr. Christison, who has enjoyed opportunities so ample* of investigating Bright's disease in the Edinburgh Infirmary, we learn that "in the earliest stage of granular disorganization of the kidneys, the urine is commonly from 1021 to 1025; very seldom so low as 1016, unless where its quantity rather exceeds than falls short of the natural average" (*Granular Degeneration of the Kidneys, &c.* p. 34). The general symptoms also were indicative of the disease in question; namely, the headache, the puffiness of the cheeks and under the eyes, the micturition in the course of the night, and the characteristic expression of countenance, which is so often observed in this disease. The quantity of albumen was rapidly diminished; but, so

* In confirmation of this remark, I may state that, when clinical clerk to Dr. Christison, we had, at one time, if I mistake not, seven true cases of Bright's disease in two wards.

far as I was enabled to extend my investigation, it was never altogether absent. In confirmed Bright's disease "it is a remarkable fact that in some instances the albumen suddenly and for a time disappears from the urine" (op. cit. p. 46). Neither does the age of the patient under consideration militate against the conclusion that he laboured under Bright's disease; for Dr. Christison has "twice had fatal cases at the age of seven or eight years under his observation" (op. cit. p. 117). Albumen, it is known, is occasionally present in the urine when there is no evidence for supposing the existence of Bright's disease. However, in answer to the question suggested, I should, from the preceding considerations, be disposed to respond in the affirmative.

It would be foreign to my object on the present occasion to discuss the subject of treatment in granular degeneration. The effects of the remedial agents which I administered have been faithfully recorded.

ACTIVE DILATATION OF THE HEART.

(For the *London Medical Gazette*.)

THE true nature of the heart's diastole is a subject upon which a variety of statement is made; and yet the evidence which has been collected in regard to this question is conclusive when rightly interpreted.

It was first suggested by Bichât, that the heart influences the venous circulation in virtue of a suction power; he described the diastole of this organ as an active movement, soliciting the blood to enter its cavities. In this opinion many French and other physiologists have since coincided. But it certainly appears improbable that the muscular structure of the heart produces an expansion as well as a contraction of its tissue; and to anticipate such a result it would be necessary to infer the alternate action of two distinct and opposed systems of fibres. We have no trace of data for admitting this inference; and here has originated the difference of opinion to which allusion is made.

From the facts adduced in favour of the view proposed by Bichât, it would appear that the active dilatation of the

auricles is well established, whilst that of the ventricles is a matter of much uncertainty. Indeed, such might have been deduced from the nature of their respective functions;—an expansive diastole in the ventricles cannot in any way affect the blood in the large veins; whereas a similar act in the auricles must have a most beneficial effect upon the motion of the blood in those vessels.

Oesterreicher contrived an ingenious experiment, by which he professed to demonstrate the passive condition of the heart during its diastole, and consequently to refute the idea of its exerting a sucking influence over the venous circulation. The heart of a frog was excised, and while pulsating compressed by means of a small weight; he then observed that the weight was raised by the systole, but that during its diastole the heart remained flat. This experiment, which is admitted to constitute the main objection against the supposition urged by Bichât, merely refers to the action of the ventricle; and it certainly proves that its dilatation has not the character of a muscular act. It is of no avail, however, in disproving the diastole of the auricles as an active movement; for the dilatation of this cavity occurs, in a great measure, during the contraction of the ventricle and consequent elevation of the weight, in which it may take some part. Such might be the effect of the auricular diastole in this experiment, if we admit the energetic expansion to occupy the first periods of its dilatation.

There are many facts which clearly indicate the expansive diastole of the auricles; but whether this results from an elastic reaction, or a true muscular act, is not unequivocally determined. The experiment of Wedemeyer and Guenther forms, perhaps, the most important feature in the evidence upon this subject. These physiologists placed a ligature on the jugular vein of a horse, and adapted to the proximal portion of the vessel a glass tube of a convenient form, and of which the free extremity was immersed in a coloured fluid. At first the inspirations and pulsations of the heart were simultaneous, and at each repetition of these the fluid rose two or more inches in the tube, and fell to its original level

in the intervals: the inspirations soon increased in frequency, and it was then noted that the rise of the fluid coincided with the dilatation of the auricle. The experiment would be more satisfactory if the ambiguity resulting from the effect of the inspirations upon the motion of the blood in the veins were avoided; this might readily be accomplished by repeating the same inquiry upon an animal poisoned by woorara, and in which the circulation is maintained by artificial respiration. The power of suction, which is thus attributed to the auricles, may be simply due to its returning to a state intermediate between contraction and dilatation, in virtue of its elasticity. But this effect has been otherwise explained. M. Cruveilhier has recently recorded a case in which the heart of an infant lay external to the thoracic parietes; he had occasion to observe that the hand, when made to grasp the heart, was forcibly and rapidly opened during its dilatation. This has been regarded as decisive evidence of the muscular nature of the diastole; but the inference, it must be admitted, is fallacious. The effect is due to the dilatation of the ventricles, caused by the projection of blood into them during the auricular systole. Still, Professor Cruveilhier has remarked that the diastole of the auricles is far more energetic than can be accounted for by the distension which the influx of blood from the veins causes, or by the active expansion which the elastic nature of their parietes determines.

The activity of the auricular diastole may be fairly admitted; although the question of its resulting from an elastic or a contractile action remains undecided. We have the testimony of Cruveilhier in favour of the latter view; and it must be confessed that, in the case alluded to, he has had ample opportunities of establishing a correct opinion. The influence of this suction power of the right auricle cannot be of any great extent, owing to the flaccid condition of the veins (Dr. Arnott.) Together with the effect of inspiration it will aid indirectly the entire venous circulation, by emptying the large veins near the thorax, and so removing resistance to the entrance of blood into these from other vessels.

In the foregoing observations, no part of the evidence has tended to

prove the active diastole of the ventricles; on the contrary, we have regarded it as a passive state on speculative grounds; and this we have done in the absence of positive and direct experiment.

MEDICUS.

Feb. 17, 1843.

MEDICAL GAZETTE.

Friday, March 3, 1843.

"Licet omnibus, licet etiam mihi, dignitatem Artis Medice tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

THE COLD WATER TREATMENT.

It is one of the offices of a weekly journal to discuss the topics of the day—to *daguerreotype* the fleeting shadows of the moment; and thus to preserve a lasting record of those whims and oddities which often excite angry passions at their birth, but are afterwards remembered only with a smile. Hence, in 1839, we gave the first account of the water system which had appeared in this country, and recurred to the subject more than once last year*. Nor is the topic altogether void of interest. When hydropathic establishments have vanished to the limbo where tar-water, and metallic tractors, and St. John Long's liniment repose, physicians will have leisure to weigh the merits of this method of procuring perspiration; and as, in spite of Long's flayings, we do not renounce the use of stimulant embrocations, so cold bathing and sudorifics may pass through the stringent ordeal of extravagant praise, and even become more used as they are better known. Good remedies will not be rejected by the judicious practitioner, though so strenuously vaunted by advertising hydropathists. In a word, water, having been recommended as a remedy from the most remote ages, will, no doubt, survive the dangerous

* MEDICAL GAZETTE, April 29th, and July 8th, 1842.

patronage of the Claridges and the Wilsons.

From the days of Antonius Musa, who forbade Horace to enjoy the warm baths among the myrtle groves of Baia*, down to Priessnitz and Gräfenberg, there has been an unceasing controversy between the partisans of cold and warm bathing. In this country, popular theory inclines to the side of cold bathing; and as this is rather a painful expedient for the greater part of the year, the majority of skins remain unrefreshed by any bath during our long winter. At Teplitz, where the public bath can be used for one halfpenny sterling, matters are far different.

Let us now consider two of the fresh pleadings in favour of Gräfenberg. Dr. Heathcote, of Rotherham, passed a short time there, and has published an account of what he saw†. Of Priessnitz he seems to think that,

—quid virtus et quid sapientia posset
Utile proposuit nobis exemplar.

Dr. Heathcote begins by informing us how Priessnitz himself lives. He rises between 4 and 6, according to the season; breakfasts with his patients at 8; dines with them at 1; and spends the day in seeing his patients.

“At 7 o'clock supper is laid; the fare being exactly the same as at breakfast; and from this hour until 10, the inmates of Gräfenberg House are dropping off to bed. On Sunday evening, however, there is a general dance in the saloon. Two princesses were pointed out to me on one of these occasions. They rest on the other six nights of the week.”

Priessnitz being himself without ailment, drinks only as much water as he likes, and advises those who are in good health to do the same. The sick are to drink more, in order to attenuate

their morbid secretions, and expel them by the route of the skin.

Priessnitz, again, does not eat so voraciously at table as some of the patients do; one of them used to swallow half of a five-pound loaf every morning at breakfast, the master of hydropathy disapproving. This patient, it seems, was labouring under excess of health, and did not know how to manage his complaint.

According to Dr. Heathcote the principles of the Gräfenberg practice are three in number:—

The first is a reliance on the *vis medicatrix naturæ*.

The second is, that the skin is the “instrumental organ of preservation and healing, by its perspiring, exhaling, and occasionally secreting functions: accordingly, the whole treatment is applied to this organ, and to the stomach and bowels, which may be considered as the internal skin of the body.”

The third is much exercise in the open air.

These principles are sufficiently commendable, and the second one is so comprehensive, that it is difficult to imagine a system of medicine founded on any thing else. Whether the physician prescribes a *tisane de riz*, or the actual cautery, a bath at 40° or at 100°, croton oil to be swallowed, or morphia to be exhibited endermatically, the bowels or the skin are the first recipients of his remedies.

The actual difference, however, is, that while in ordinary practice the order of attack is, bowels, skin, at Gräfenberg it is skin, bowels. The latter, indeed, seem to be but secondarily stimulated, as we do not hear of the administration of purgatives in the Silesian water-hospital.

Temperance is the grand and golden rule at Gräfenberg. An elderly lady, however, who was not ac-

* Nam mihi Baias
Musa supervacuas Antonius, &c.

HOR. EPYST. LIB. I. XV. 2.

† Some Observations on the Cold-Water Treatment, as witnessed at Gräfenberg, in the course of last Autumn. By G. H. Heathcote, M.D. Rotherham. London, 1843.

quainted with the adage *ne quid nimis*, or, who did not know that it applies to water-drinking, as well as to everything else, swallowed twenty-one half pints *ante meridiem*. Having finished this colossal draught, she was attacked with numbness in the feet, which extended upwards, till she became insensible. She was put to bed, but Priessnitz was not informed of the accident till next day. She was rubbed in water of the temperature of 62° , till reaction was produced; and this appears to have been a sufficient goad to the *vis medicatrix nature* to cure her.

The methods employed to produce perspiration are two in number. In the first, the naked body is tightly wrapped up in a thick blanket, and then covered with a feather bed. The patient then lies from one to five hours till perspiration sets in. As soon as this is established, he drinks cold water in doses of a quarter of a pint, at intervals of twenty minutes or half an hour. After having perspired from half an hour to three hours, according to circumstances, he takes a dip or two in the cold bath, which finishes the affair. If the patient is too weak to bear the bath at the natural temperature, he is washed instead, for a minute or two, in a tub containing only three or four inches of water, at 62° .

The second method, which is more commonly used than the first, consists in enveloping the body in a wet sheet, which is covered with a blanket and feather bed. The sheet is employed for an hour or less; after which the patient proceeds either to the cold bath, or the milder discipline of the tub.

Dr. Heathcote gives the details of three cases in which he tried the cold water system with advantage, before visiting Gräfenberg. One instance occurred in the county of Galway. A patient labouring under typhus fever, with petechiæ, submitted, with some

reluctance, to this therapeutic novelty. He was wrapped in a wet sheet, and covered with "all the blankets, rags, coats, and clothes," that could be mustered. In ten minutes he was relieved; on the third night he slept a long time in his wet sheet; on the sixth, his pulse was 80, and he was without fever; in a few days more he was at work in the fields. The patient had taken aperients previously; but during Dr. Heathcote's attendance he had nothing but ten grains of nitre, and this chiefly to gratify the nurse.

It was these cases, with Currie's reports on cold water, and Claridge's account of Gräfenberg, that egged on Dr. Heathcote to visit the place himself, and judge, as people say, with his own eyes. He arrived at Gräfenberg in September 1842, and consulted Priessnitz about his own case. Priessnitz has one qualification which stands high indeed among medical merits: it is more than half the battle. *He listens with exemplary patience*. Lord Chesterfield tells his son that many a man would rather you heard his story, than granted his request; and, assuredly, many an invalid derives the chief assuagement which his disease admits, from the listening ears and attentive eyes of his much-enduring physician.

It is not stated what Dr. Heathcote's malady was; but he was ordered the wet sheet, followed by the tub with three inches of water at 62° , a couple of plunges in the cold bath at 41° , and then a return for a moment or two into the more genial tub. This was continued with some additions; among other things, he was to drink five pints of water in the course of the day, but *not* if it inconvenienced him: "to walk about in the open air, or to take exercise by sawing or chopping wood."

In the second week the douche was added. The time of its duration was not fixed, but Dr. Heathcote found that

from half a minute to a minute was ample, particularly on a frosty morning.

After a week's application, the douche began to produce what is called a *crisis* at Gräfenberg. A small pimple first appeared on his skin, which soon enlarged into a boil; the area of the inflamed skin being six inches in diameter, and the elevated part of the size of a shilling. The boil was constantly moistened by a bandage of wet linen covered by a dry one. During its continuance the cold plunge-bath and sit-bath were omitted, but the tempered baths and dripping sheet were continued. The theory there is, that these boils are the efforts of nature to expel the morbid matter; in other words, the humoral pathology reigns triumphant at Gräfenberg.

"From an untoward pimple upon the nose, to the confluent eruption of the small-pox over the whole body, the *vis medicatrix* is engaged; in the former, exhibiting the evil intruder in a species of pillory; in the latter, expiring herself in a prodigious struggle to expel an exhaustless poison."

A great and destructive error in Priessnitz's practice is that he refuses to open abscesses. Dr. Heathcote gives at some length the case of a girl of scrofulous constitution, who fell a sacrifice to this malapraxis last October. When an abscess formed under the left breast, Priessnitz ordered her to be rubbed in a shallow bath of water at 62°, twice a day for an hour and a half at a time. Dr. Heathcote was present at the post-mortem examination. The chief appearances were, congestion of the lungs; an abscess under the right ear containing two ounces of pus; extravasation of blood under the skin of the fingers, where three abscesses had formed; and an ulcer above the sacrum, which had sloughed to the bone.

The omitting to open the abscesses, and the long debilitating frictions in cold water, were capital errors in the

treatment of this case; and when we consider that abscesses are professedly produced by the Gräfenberg plan, we may easily conceive the amount of suffering that must be caused by this crotchety of Priessnitz. Those who think with the Bavarian Baroness, in Dr. Granville's Spas of Germany, that *on est médecin né, comme on est né poète*, may be disabused by this and myriads of similar examples, and may learn how often an empiric of fifty is ignorant of things familiar to a dresser of a month's standing. Dr. Heathcote's summing up is extremely favourable to the system, but while he extols it in fever, diarrhœa, chronic dysentery, gout, and rheumatism, he has the candour to confess that it will not cure consumption, aneurism, disorganized liver, or diseases of the heart.

Few practitioners, we imagine, rely upon medicinal sudorifics, for there is scarcely any class of remedies so uncertain; and if it should turn out, therefore, that the wet sheet is a safe and sure method of producing perspiration, it will be a valuable addition to our materia medica. As to the diseases in which it will be applicable, that remains for future investigators to determine. The best and most impartial experiments on the subject which we have hitherto seen are those of the Norwegian licentiate (Blich) which we formerly published in our journal.

Mr. Schlemmer, a German hydropathist residing in England, has put forth some remarks on the same topic, which need not detain us long*.

He divides the cold water system into nine branches, namely, "drinking; full bathing after sweating; full bathing without sweating; partial bathing of particular parts; douche, or spout-

* Hydropathy. The Cold Water Cure of Diseases; its Philosophy and Fact. With cases proving how certainly this system benefits the afflicted. In two lectures: 1st, For the healthy. 2d, For the sick. Translated from the German of Mr. C. V. Schlemmer. London, 1842.

bath; cooling poultices; animating bandages; injections; frictions."

By *animating bandages* the wet sheet is meant. Like several other writers on this subject, Mr. Schlemmer affirms that the sweating process brings out the odour, or even the visible substance of medicines taken years before, such as mercury, sulphur, camphor, &c.

He frankly acknowledges that success cannot be expected when the patient is in any of the following conditions:—

"1st. Such a reduced vitality that no reaction can be excited.

2d. A born or organic deformity.

3d. A brought on organic destruction."

The last sentence requires re-translating into English. It seems to mean "organic disease, though not congenital." The most curious part of Mr. Schlemmer's *brochure* is a note in which he proposes a new system of diet, long since adopted by himself, his three sons, and their tutor. It consists in eating raw food alone. "Choose, therefore," he says, "in the animal kingdom, eggs and all creatures you can eat in a living state, as, for instance, oysters and animalculæ. [Faugh!!]. In the vegetable kingdom, all grains, seeds, and all fruits which possess a reproductive germ of life in themselves."

He, sons, and teacher, accordingly eat raw peas, beans, and fruit; "our teeth are our mills, the stomach is the kitchen."

Oh! Mr. Schlemmer! *Quousque tandem abutere patientiâ nostrâ?*

SPECTRAL ILLUSIONS.

BEING AN EXTRACT FROM A PAPER PUBLISHED

By DR. PATERSON

In the Edinburgh Medical and Surgical Journal.

1.—THE subject of the first case which I shall relate is a man of spare habit of body, of industrious and extremely temperate habits, and of education superior to the station of life in which he is placed. His

occupation, for a series of years, has been that of an itinerant umbrella-maker; that is to say, he makes umbrellas at home, and travels through the country afterwards selling them. On one of these excursions, after much exposure to wet, he was seized with severe inflammatory sore-throat, and afterwards with acute rheumatism. When the fever and rheumatic affection had passed off, he was left in a state of extreme debility; his digestive organ could not be brought into proper order, and he was subject to slight attacks of *timulus aurium* and giddiness of the head. About this time he became aware that the pages of all books appeared to him to be divided into two columns. This was especially annoying to him when he perused his larger print Psalm-book, which he well knew, from long and frequent perusal, not to be divided into columns. This illusion was at first alone confined to the pages of his books, but soon everything that he looked at presented a dark indefinite line dividing it into two halves. He has frequently pointed out to me a blank perpendicular space dividing every body, into which he said he thought he could introduce his hand. On several occasions he made rather serious mistakes, when he was able to go about and take walking exercise, by fancying that he was walking through a gap in a wall or paling, which illusions, however, disappeared upon his close approach. The most amusing, however, which he recounted to me, was an illusion which occurred to him in the streets of Edinburgh. It was among the first times that he had been able to go so far, and whilst walking along George's Street or Queen's Street (I am not sure which,) he was astonished upon suddenly beholding the street divided in two halves, the one of which seemed to present a steep ascent, the other as steep a descent. The poor fellow said he was perfectly bewildered, yet nevertheless resolved, that, as he was going up to Edinburgh, the steep ascent was the one he ought to choose. He never fancied for a moment that this was an illusion, having never seen anything of the kind before, and fearlessly addressing himself to his journey, began to toil along the level street, as if he was going up a hill, to the no small amusement of a variety of passengers, who appeared equally to him to be toiling up and down the ascent or descent.

Soon after he had commenced climbing this imaginary steep he discovered that he was still on level ground, and that it must be one of his illusions. This individual still enjoys very indifferent health, and not unfrequently illusions of a similar kind are witnessed by him. None have now been seen, however, for many months.

CASE 2.—The next case is one of a very remarkable character; unfortunately, how-

ever, the illusion which I am about to describe only occurred once, and that at a considerable interval of time; but so strong is the recollection of it in the mind of the lady, that the most minute circumstances connected with it are at once recalled to her recollection; and I may state that, from the high respectability of the lady, the authenticity of the apparition is placed beyond the reach of question.

At the period of the occurrence which I am about to mention, Miss N. was just convalescent from an attack of slight fever, which had been of some duration, and had reduced her strength considerably. On the evening on which the allusion occurred, in the month of August, all the family had gone out early to an evening sermon, at some little distance. Miss N. not being allowed to go out at the time, was left the sole inmate of the house. Her father, an infirm old man, who seldom went much from home, was also out. She knew not, however, where he was, but fancied that he had gone to church with the other members of the family. It was a beautiful evening when they left the house, the day having been very warm, and the atmosphere sultry, but they had not left very long ere some heavy clouds began to collect over head, and to betoken a storm. The anticipations from the appearance of the sky were not long in being realized, as it came on a most dreadful night of lightning and thunder, accompanied with heavy rain. Miss N. seated herself at a front window to watch the storm, which was then raging violently; her mind unconsciously wandered upon her father, where he might be; if at church with the rest of the family, or elsewhere. Brooding upon this circumstance, and being still rather weakly, she was consequently thrown in a state of considerable alarm.

The above minute particulars are necessary to show the state of mind in which Miss N. was at the time of seeing the illusion, as well as the causes which produced that state. I may also here mention that the lady is not in the slightest degree a believer in superstitious appearances.

Miss N., in the state of mind which I have just described, fancied that her father had been killed in the storm, and becoming very uneasy regarding him, she went into a back room which he generally occupied, and near the fire of which he usually sat in a high-backed arm-chair. On entering the room, Miss N. was astonished to behold the image of her father in his usual dress and attitude, and seated by the fireside. Not fancying that it was an illusion, she immediately thought that he had entered the house without her having heard him, and going forward to lay her hand upon his shoulder, and enquire how he had got in, and

repeating the word "father," she attempted to lay her hand upon his shoulder, but her hand encountered vacancy, and she retired in alarm. As she was about to leave the room, however, she looked back, and still saw the figure occupy the same position in the chair. After recovering from the first effects of her alarm, Miss N. determined to enter the room again, and investigate into whether the appearance which she had witnessed might not be caused by a peculiar arrangement of drapery, or something lying upon the chair. The same appearance, however, presented itself as before, and which she now became convinced was some spectral illusion. In this belief she looked at it from various sides and corners of the room, rubbed her eyes, and changed her position in various ways, and it still appeared in the same attitude. She also left the room and came back again, but still the apparition was there.

Fully half an hour might elapse from the time that this lady first saw this apparition till it disappeared. She did not see it vanish, but it was still present when she entered the room three or four times, but on the fourth or fifth it was gone. The old gentleman was in good health at the time, and had been to church with the rest of the family, from which they all returned at the proper time, the storm having by that time passed over.

3. The subject of case third is a professional gentleman of high literary attainments. His narrative of the illusions is before me, and I shall nearly give them in his own words. It is necessary to premise, however, that he is an individual of a sanguineo-nervous temperament, and possesses a very powerful imagination. I have never been present at the time of his seeing any of the illusions which I am about to relate; but on several occasions have attended upon him professionally. On one of them he had a pretty smart attack of scarlatina, which was succeeded at no great interval by a very severe attack of typhus fever. During both of these diseases the excitement of his mind was great, and the phantoms of his imagination so numerous, so varied, and so vivid, as to surpass any thing that I had previously seen, or since witnessed.

Before detailing the particular illusions of this gentleman, it seems of consequence to premise a peculiarity of vision to which he is subject, and which consists in the power of the retina continuing impressions, and probably also of the mind to recal them. Thus he has often repeated the well-known experiment which we have mentioned, of looking at a window at some distance from the eye, and then transferring the eye quickly to the wall. He has never been able, however, to see the change of colour which Dr. Brewster describes as taking place when

the object itself is succeeded by the spectral impression of it.

Mr. H., too, has frequently seen, on looking at a line of lamps on a street, and then suddenly turning his eyes to a dark cloud, the line of lights continuing for a considerable time there. On one occasion, says he, "when looking at the front of the Royal Institution, by gas light, and suddenly turning to the sky, I beheld the pillars almost as distinct as when I saw the real object." These two instances may be referred to the well-known power of retaining impressions. In the following instance, however, the impression must be considered as recalled to the retina by some unconscious mental power. When walking with a friend one evening by moonlight, Mr. H. happened to look up and beheld the vane of a single staff, having a crown on it, exactly on the lunar surface. So forcible was the impression that he directed the attention of his friend to it, and continued looking at it for a few minutes. They then proceeded onwards, and had passed a large building before they again saw the moon, when to the sight of Mr. H. the image of the crown and vane still presented itself on the surface of the moon, as distinct as the real object a few minutes before. These phenomena do not occur to Mr. H. at all times, but he has always the power, when looking at a window, and then turning his eyes to the wall, of seeing the window again on the wall.

The first distinct spectral illusion of which Mr. H. became conscious occurred in the autumn of the year 1838. He was lying on a sofa reading, being in his usual good health at the time; and that the subject could have had no influence in exciting such ideas, it may be mentioned that the work in the course of perusal was De Comines' History of the House of Burgundy. On looking towards the window, through which the rays of light were entering and falling brightly on a chair placed near it, he saw a skull, and of course conceiving it to be a reality, was on the point of ringing the bell to inquire why it had been brought into that room, thinking it was one belonging to himself, which had been placed there by some of the family. He, however, rose, and walking to the chair, was on the point of placing his hands upon it to lift it, when it disappeared. Mr. H. felt so startled by this circumstance that he nearly fell on the floor, and a slight giddiness continued during the remainder of the afternoon.

2d. About a fortnight after the occurrence just related, and about the beginning of November 1838, Mr. H., when sitting in the Rhetoric class room of the Edinburgh University, conversing with a friend before lecture, turned his eyes suddenly towards the window, and then on the desk, which ex-

tends along the room, and on which the light was falling at the time, he again beheld the skull. So convinced was he of the reality of the appearance that he immediately said to his friend, "I wonder what the Professor is going to do with the skull to-day." Doubtless very much to his friend's astonishment.

3d. After reflecting on these cases, it occurred to Mr. H. that he had for months before seen people on the road coming towards him, and often wondered where they had so suddenly gone to. He had at the time no idea that they were illusions, but a few days' experience satisfied him of their nature.

4th. One evening towards dusk, whilst sitting in the garden, Mr. H. rose suddenly and experienced a slight giddiness, which he was in the habit of feeling occasionally when rising quickly to the erect posture. As the giddiness went off, he beheld the figure of a man, with a large blue cloak thrown around him, and standing under a tree at a short distance: the figure, in the course of a minute or two (during which Mr. H. stood gazing at it) gradually became more faint in outline and colour, and disappeared. About half an hour afterwards, on going from the house again into the garden, under the same tree, and in the same spot, Mr. H. beheld the same figure. It occurred to him that it was an excellent opportunity for trying Dr. Brewster's test of deciding between illusions and realities: he therefore pressed the one eyeball, without producing any other effect than simply rendering the figure less distinct, but on squinting he distinctly saw the figure doubled to as great an extent as a real object, by the same process. Mr. H. immediately walked towards the figure, which gradually receded, and disappeared as soon as it cleared the shadow of the tree.

5th. I shall relate this in Mr. H.'s own words. "During my attendance at school I was in frequent intercourse with a boy, whom I shall call D—: he was, in short, my intimate acquaintance in boyhood for many years, until, by the continued dissipation of an infatuated father, the circumstances of the family began to decline, and, step by step, they became reduced to the greatest wretchedness. In the course of a few years D— was sent to sea, as the speediest method of getting rid of him. I consequently lost sight of him for many years, until at length I heard that he had returned to his wretched home, labouring under symptoms of advanced consumption. He was attended during his illness by Dr. C., and three months after his return home he died. I was requested to attend the inspection of the body, and it will readily be believed that many reflections of a sad and painful nature occurred to me, producing an

impression upon my mind which several years failed to dissipate. This occurred in 1835, and three years afterwards the circumstances of the family having continued the same, their unhappy case was again recalled to me in the following singular manner:— One evening, at the time when I was daily in the habit of seeing spectral illusions, I was engaged in reading Tytler's *Life of the Admirable Chrichton* for a considerable time after the rest of the family had retired for the night, and after I had finished my book, and was on the point of proceeding to my bed-room, I saw a letter lying on a side-table, which proved to be an invitation to attend the funeral of D.'s mother. This was the first intimation I had had of her death; and many painful circumstances connected with her unhappy life, which need not be mentioned here, immediately occurred to me. I proceeded to my bed-room, reflecting upon these circumstances, undressed myself, and had extinguished the candle, when I felt my arm suddenly grasped a little below the shoulder, and forcibly pressed to my side. I struggled to free myself for a time, calling aloud 'let go my arm,' when I distinctly heard the words 'don't be afraid,' uttered in a low tone. I immediately said, 'allow me to light the candle,' when I felt my arm released; and I then proceeded to another part of the room for means to light the candle, never for a moment doubting but that some one was in the room. I at the same time felt an uneasy giddiness and faintness, which almost overpowered me. I succeeded, however, in lighting the candle, and, turning towards the door, I beheld the figure of the deceased D.—standing before me. It was dim and indistinct, as if a haze had been between us, but at the same time perfectly defined. By an impulse I cannot account for, I stepped towards it with the candle in my hand: it immediately receded at the same rate as I advanced, and, proceeding thus with the face always towards me, it passed through the door slowly down stairs till we came to the lobby, when it stood still. I passed close to it and opened the street door, but at this moment I became so giddy that I sank down on one of the chairs, and let fall the candle. I cannot say how long I remained in this situation, but on recovering I felt a violent pain over my eyebrows, with considerable sickness and indistinctness of vision. I passed a feverish and restless night, and continued in an uneasy state during the following day. I may mention that the figure was at times more distinct than at others, but always dim and imperfect. I was always able to distinguish the different colours of the clothes, and I had never seen the individual during life dressed in a similar way. In all its characters it approximated the illusions of

fever more than any other which I have witnessed, and I never for a moment could have considered it a real object. It is difficult in this instance to find any other exciting cause except the pain felt in my arm, which I can now refer to cramp of the triceps muscle acting on the peculiar state of mind incident to spectral illusions, together with a powerful imagination, already greatly excited by the peculiar circumstances of the case. I may state that I have felt the same feeling in the arm since, without associating it with any similar consequences."

In connection with this gentleman's illusions, it is proper to state that another member of the family has been affected with that peculiarity of vision, by which only one-half of the object is seen at a time, such as one-half of a figure on the street, or, as in the case of Wollaston, one-half of the name on a door or signboard. Immediately succeeding the occasions on which these phenomena occurred, the lady was always affected with violent headache, and frequently with severe epistaxis.

It was Mr H.'s intention to have detailed to the world the numerous instances on which these phenomena have occurred to him; "but," says he, "when I reflected on the subject, I always found the illusions increased to such an extent, that they became occasionally truly alarming." Indeed, it was with difficulty that I could persuade him to write out for me short notes of the appearances, and this at a considerable interval of time after they had ceased entirely, lest they should again return.

CASE 4.—A gentleman in the south country, in the prime of life, and in perfect good health, was paying a visit one evening towards dusk to a neighbouring friend. After shutting the avenue gate, and as he was about to proceed up the avenue, the figure of a female dressed in black glided past immediately before him. Soon after, another figure, precisely similar in appearance and dress to the former, followed. Thinking that this might be some trick which the females of the house were about to play upon him, he stretched out his hand to grasp the third as she made her appearance, but, lo! there was nothing there, and, upon looking after the figure, it had vanished. Shortly afterwards, in crossing through one of the parks in the neighbourhood of the house, he fancied he saw several asses grazing, and he was about to lay his hand upon the back of one of them and stroke it down, when, to his dismay, his hand encountered nothing. They still, however, appeared for a time before him, and he tried the experiment of touching them with his hand several times.

It is probable that this gentleman (who is still alive and well) had been much exhausted

by fatigue at the time when this illusion occurred to him, as it more resembles some of the apparitions of the early stage of *delirium tremens* than any that has been previously recorded.

CASE 5.—I have been favoured, through the kindness of Dr. Dunsinure, with the history of an interesting spectral illusion which occurred to a medical gentleman, a friend of his, and which is detailed below in the gentleman's own words.

"Some four or five years since, a middle-aged respectfully dressed man, a stranger in Edinburgh, expired suddenly in a public omnibus, when passing along the North Bridge. The body was placed in the police-office till claimed by the friends. Next day I received from the authorities the usual warrant to make an examination, and report as to the cause of death. (Rupture of an aneurism into the pericardium.)

"On entering the apartment where the body lay, clad as when in life, and attired as for a journey, I was informed of the affecting incident narrated above, and I naturally felt deeply interested by a calamity in itself so appalling, and probably most painfully eventful to others. This feeling was, moreover, greatly heightened at the time on observing more closely the features of the dead man. The countenance was remarkably open and intellectual, and its general expression pleasingly striking and attractive, even to an extreme. The impression on my mind, however, gradually wore off, and was in a manner forgotten, when unexpectedly recalled at a distant period in the following manner:

"I had been employed for a few days in writing on a professional subject, and it so happened, that, of a forenoon when thus engaged, on raising my eyes from the paper, the vision of the dead stranger stood before me, with a distinctness of outline as perfect as when I first saw him extended on a board. His very apparel was identical, only that the broad-brimmed hat, which formerly lay by his side, now covered his head; his eyes were directed towards me; the peculiar benignity of expression, which before struck me so much, now beamed from his countenance. In a few minutes he disappeared.

"I may remark, however, that, when the image was quite distinct, I could, after an effort of the eye, discover through its person a print of Caractacus hanging on the opposite wall."

The gentleman who witnessed the above-described illusion has had various personal experiences in connection with the subject. He is at present in good health, and was in perfect health at the time that the above illusion occurred to him.

The illusion we have just described is of

a most interesting description, not only as regards the state of health in which the individual was in at the time, but also as regards the illusion itself. It was simply a recalled impression, and, therefore, ought to have been placed first in the list of cases recorded in the present paper. The mind of Dr. — had been deeply impressed at the time of the occurrence, and more especially with the peculiarity of dress and benignant aspect of countenance of the deceased. The circumstance connected with it had almost passed from his memory, until, after close mental application for some days on a professional subject, it is probable that a train of ideas, of which he might not at the time be aware, brought again to his recollection the form and aspect of the individual in whose fate he had felt such a deep interest; and, as when an individual, with a striking object before him, turns his attention upon some distant one, the recollected image of the latter, for a moment, excludes the perception of the former; so, with Dr. —, the image of the deceased was portrayed before him with great accuracy of outline; nevertheless, and nothing daunted, he tried the experiment of looking at objects through the image, and distinctly saw a plate of Caractacus, which he knew to be hanging on the wall, as it were through the spectre. Thus was his experiment very similar to the one we mentioned above.

The close mental application, combined with a constrained position at the time, or probably some derangement of stomach, of which he might not be aware, was the cause of that pathological condition of the brain or membranes which had given rise to the illusion.

The last illusion which I have recorded of Mr. H.'s appears to me one of the most singular which has been described, or of which I am aware. In cases first, second, fourth, and fifth, as well as in the majority of those on record, sight alone was the sense affected. In Mr. H.'s case, however, both his vision, hearing, and touch, were equally brought into error. It must have been truly alarming when his three senses were thus deceived; and we cannot wonder that he was overcome with horror towards the termination of the illusion.

Nicolai heard the phantoms of his imagination talk to him, and some of them even addressed him at considerable length. Mrs. A., too, whose case Dr. Brewster has related, frequently heard what she conceived to be the voice of her husband calling to her by name.

STRUCTURE OF THE ARTERIES.

AFTER a variety of conflicting and unsatisfactory accounts, Henle* seems at length to have discerned such structures in the arteries as are adapted to the functions which experiment shows to be performed by them. His account of the general structure is briefly this:—

1st, They have an epithelial lining†, consisting of a very thin layer of elliptic or rhombic lamellar cells, which are sometimes elongated into longitudinal spindle-shaped fibres‡.

2d, There is, immediately external to this, a layer of peculiar tissue, the *striated* or *fenestrated* coat, (corresponding to the *internal coat* of the older anatomists,) consisting of a very thin, rather stiff, and brittle membrane, often perforated by numerous round or oval apertures, and bearing pale, flat, very narrow fibres, which have, for the most part, a longitudinal direction, and give it a peculiar delicately-striated appearance. This coat, which is often morbidly thickened, and when an artery is contracted is commonly thrown into longitudinal folds, is produced by a metamorphosis of the epithelium, whose cells, as their nuclei disappear, coalesce and form a homogeneous membrane, on which the fibres are afterwards deposited, and which at last, as the apertures in it enlarge, is completely removed, leaving the fibres free. (See p. 9.)

3d, In some arteries there is, next, a coat formed by a single layer of *longitudinal granular fibres*, flat and tolerably wide, analogous to a coat which is much more prominent in the veins.

4th, A coat composed of *circular fibres*, (the *middle* or *elastic* coat of most foreign writers, the *muscular* coat of Hunter,) which forms the chief part of the arterial wall, and comprises all that can be torn from it in a transverse direction. Its fibres are flat, clear, and granular, and break with abrupt ends. Each of them is commonly marked along its middle by dots scattered, or regularly arranged in a longitudinal row, or by a narrow streak: these are the remains of elongated nuclei, which have formed, as it were, the pattern, according to which

the homogeneous membrane in which they lay has broken up into the flat fibres. The streaks formed of the elongated nuclei often branch and anastomose, so as to form that kind of net-work which has led to this coat being mistaken for elastic tissue; whereas it is, in fact, the proper contractile coat of the artery, and is, in all respects of development and microscopic structure, similar to the layers of organic muscle in the stomach, &c.

5th, On its exterior there is a coat of genuine elastic tissue, (*tissu jaune*, the *elastic coat* of Hunter): this exists, however, only in the larger arteries; and its thickness, in comparison with that of the preceding, diminishes in direct proportion to the size of the artery. The direction of its fibres varies greatly in different arteries*.

6th, The *external cellular coat*, consisting of common cellular tissue, with longitudinal closely-woven filaments.—*Report on the chief results obtained by the Microscope, in the study of Human Anatomy and Physiology*. By JAMES PAGET, Demonstrator of Morbid Anatomy at St. Bartholomew's Hospital, &c.

[An excellent compendium, which does infinite credit to Mr. Paget's judgment, as well as industry.]

ANECDOTES OF BERZELIUS.

WHEN Berzelius returned he received us with great cordiality. We were much struck with his appearance—judging by the appearance of some of the German *savans*, we had expected to find him an odd out-of-the-way kind of being; but he is totally devoid of affectation either in dress or manner. Men of eminence in Germany startle the stranger in quite a different way; they may look like men of genius, but would seldom be mistaken for men of sense. Their pale faces, long “unkempt” locks, and antiquated garments, afford the most complete contrast to the healthy looks and unaffected bearing of this Swedish rival. In fact, from his dress, ease of manner, and total want of pretension, he might pass in any society in Europe, not for Berzelius the great chemist, but Berzelius the well-bred gentleman. In place of Dr. Faustus' garments, he sports a smart carriage cap, silk vest, and blue coat, very like those of ordinary mortals. He is a well-made good-looking man, of the middle size, rather stout than otherwise, but with nothing in his appearance to make us suspect that he had gout, and found it necessary to drink chalybeate water. In a visit to Paris, the

* Ueber die Contractilität der Gefässe, (Casper's Wochenschrift, Mai 28, 1840,) and more fully in his Allg. Anat.

† First described by him in his essay, Ueber die Ausbreitung des Epitheliums, (Müller's Archiv, 1838.)

‡ Remak and Reichert (Müller, Archiv, 1841, CLXXXVIII.) hold, that these are not the innermost cells of the vessels, but that within these, and in actual contact with the blood, there is a layer of flattened, round, and polyhedral cells, with round, yellowish, nuclei and nucleoli. On all these observations by Henle, see Reichert's remarks.

* See especially Küsschel, (Diss. inaug. de arteriarum et venarum structurâ, Vratisl. 1838,) and Schwann, (Encyclop. Wörterb. der Med. Wissensch. art. Gefässe.)

preceeding summer, they had tried to kill him with kindness, but judging by his looks, we should say, he will survive many such assaults; he travels much, and proposed an early visit to Copenhagen.

If his manner be unaffected, his conversation is equally so: it has nothing of *the shop* about it. Not that he shunned—for that in him would have been affectation of the worst kind—all allusion to his own science. Part of the conversation (which was carried on chiefly in English with the aid of an occasional theft from German) turned on *our* eminent scientific men; and nothing could have been more becoming than the liberality with which he praised these his worthy fellow-labourers. Faraday, Buckland, Sedgwick, Jameson, all came in for the deserved meed of approbation; but the Wernerians of course did not escape without a gentle pat. When he remarked that their warm attachment to the principles of their school was in a great measure attributable to their affection to its head, whom his pupils worshipped as a kind of deity, and, therefore, regarded every departure from his lessons as sacrilege, it struck us that the same may soon be said of himself and of his school. His pupils revere him with boundless affection; but they must expect in their turn to be termed “anti-quoted.”

He spoke highly of Thomsou, and expressed his regret that they had not met when that distinguished chemist visited Sweden, now many years ago. He said that Britain was fortunate in possessing many young chemists of great promise, among the highest of whom he particularly named Professor Johnson of the University of Durham, and formerly of Portobello, near Edinburgh. Graham of Glasgow, was also named with high commendation. In trying to recollect some particular name, he showed himself acquainted with almost every professor of chemistry in Great Britain; Dr. Forbes, of Aberdeen; Hope, of Edinburgh, &c. With continental chemists of course he was still more at home. Amongst these, our excellent Schweigger, of Halle, was not forgotten; who, in spite of his dreams, is admitted by all to be the most learned chemist of Europe. From none, however, does Berzelius look for greater things than from the new professor of chemistry at Göttingen, who was a pupil of his own. In fact, he keeps a constant eye on his pupils, both while near him and in after-life: through their agency have many of his greatest discoveries been made. Without their assistance, it could not have been told of Berzelius, that though now only in his fifty-fifth year (he was born at Lidköping in 1779), he has in his time advanced *every branch of chemical science*. It has been well said of him that he has done so much, and everything

so complete, that it appears incredible how one individual could have done it all. But while labouring himself, he has always kept others in his house, or under his care, in constant application; he has not borrowed from them, but merely kept young men employed on experiments, all of which he superintends with the greatest watchfulness. Though there have been many hands at work, there has been but one mind and one pair of eyes. “Never,” says one of his German panegyrists, “does he confine himself to one fact, but extends discoveries over the whole field of chemistry, every year surprising the world with some great addition to his former achievements.”—*Bremner's Excursions in Denmark, Norway, and Sweden.*

INFLUENCE OF IMPROVED DIET

ON THE

HEALTH OF THE INSANE.

BEFORE the revolution, the ordinary ration of bread for each lunatic in the Bicêtre was only a pound and a half. It was distributed in the morning; or, rather, it was instantaneously devoured, and part of the day was passed in a sort of hungry delirium. In 1792, the ration was increased to two pounds, and it was distributed in the morning, at noon, and in the evening, with a well-prepared soup. This is, no doubt, the reason of the difference of mortality found on making an abstract of the registers.

Out of 110 lunatics received into this asylum in 1784, fifty-seven died; that is to say, more than half. In 1788, the proportion was 93 to 151. On the contrary, during the second and third years of the republican era, the mortality was only an eighth of the whole number.—*Traité Médico-Philosophique sur l'aliénation mentale. Par Ph. Pinet.*

LAMPS USED IN COAL MINES.

To the Editor of the Medical Gazette.

SIR,

A LATE number of your valuable journal contained an interesting account of the different forms of lamps used in coal mines. It also mentioned that all are deficient—many of them in the character from which they have taken their name. Allow me to offer a suggestion, or rather to ask a question. Would it not be possible to apply the discovery of M. Payerne to the formation of “safety lamps?” By it, it appears certain that animal life and combustion can be supported under water for a considerable time. Here, then, are the means of constructing a

lamp, the flame of which would be entirely shut out from the surrounding inflammable air, and thus all danger of explosion be prevented. It seems desirable that miners should have an indication of the presence of fire-damp: this lamp would not afford it; but the deficiency could be at once supplied by having "Davy's" fixed at occasional intervals in suspicious or ill-ventilated localities; or the still more delicate test afforded by the lamp of Martin or Roberts. This suggestion is very respectfully offered to your consideration by

Your obedient servant,

R. Z.

February, 1843.

QUACKERY.

To the Editor of the Medical Gazette.

SIR,

IT would be as well to know if the strong broth and the brandy alluded to at page 718, in the last number of the MEDICAL GAZETTE, as having been had recourse to in the closing scene of life, were administered in infinitesimal doses, and if not, why not? the more especially as such would be in strict accordance with one of the miserable fallacies on which homœopathy is based; namely, that minute portions of different solid or liquid matters are capable of reaching the innermost and most vital parts of the human organization, with which parts larger portions would be incapable of coming in contact. This is the essence of one of the axioms of this profound system, as asserted in a popular pamphlet on the subject.

Is it not time, sir, that the lamentable and mischievous tomfoolery of homœopathy and mesmerism were interdicted by law, and would not the subject be almost as profitable a matter for discussion in our senate as some other matters that are there discussed? for instance, the little *faux pas* of that most distinguished statesman, Lord Ellenborough, with regard to the gates of the temple of Somnauth.—I am, sir,

Your obedient servant,

C. F.

Lymington, Hants,
Feb. 13, 1843.

BOOKS RECEIVED.

Dr. Turnbull on the Treatment of Diseases of the Eye by Means of Prussic Acid Vapour.

An Essay on the Cold Water System. By Thomas J. Graham, M.D., Graduate of the University of Glasgow, M.R.C.S.L.

A Treatise on Diet; comprising the Natural History, Properties, Composition, Adulteration, and Uses, of the Vegetables, Animals, Fishes, &c. used as Food. By William Davidson, M.D. M.R.C.S.E. &c.

ROYAL COLLEGE OF SURGEONS.

LIST OF GENTLEMEN ADMITTED MEMBERS.

Friday, February 24, 1843.

A. P. Hamilton. - C. P. Ring. - W. Cantrell. - J. T. Kirkman. - T. H. Cooper. - J. Currie. - G. B. Irving. - J. C. Robinson. - J. I. Hely. - E. J. Johnson. - J. N. Morse. - H. W. Price.

A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, February 18, 1843.

Small Pox	16
Measles	24
Scarlatina	24
Hooping Cough	27
Croup	11
Thrush	4
Diarrhœa	5
Dysentery	3
Cholera	0
Influenza	4
Typhus	24
Erysipelas	6
Syphilis	1
Hydrophobia	0
Diseases of the Brain, Nerves, and Senses ..	154
Diseases of the Lungs and other Organs of Respiration	297
Diseases of the Heart and Blood-vessels	22
Diseases of the Stomach, Liver, and other Organs of Digestion	48
Diseases of the Kidneys, &c.	4
Childbed	12
Ovarian Dropsy	0
Disease of Uterus, &c.	1
Rheumatism	1
Diseases of Joints, &c.	4
Ulcer	1
Fistula	1
Diseases of Skin, &c.	1
Diseases of Uncertain Seat	104
Old Age or Natural Decay	96
Deaths by Violence, Privation, or Intemperance	22
Causes not specified	4

Deaths from all Causes 921

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude $51^{\circ} 37' 32''$ N.
Longitude $0^{\circ} 3' 51''$ W. of Greenwich.

February.	THERMOMETER.	BAROMETER
Wednesday 15	from 15 to 30	29.39 to 29.26
Thursday . 16	19 31	29.15 to 29.13
Friday . . 17	15 35	29.39 to 29.44
Saturday . 18	27 34	29.39 Stat.
Sunday . . 19	29 35	29.39 to 29.31
Monday . . 20	33 39	29.25 Stat.
Tuesday . . 21	35 49	29.34 to 29.30

Prevailing wind, N. and N.E.

The 15th and 16th cloudy; small flakes of snow during the morning of the 15th. The 17th, clear till the evening. The 18th cloudy, snow and sleet frequently falling. The 19th and 20th cloudy, with misting rain. The 21st sunshine frequent during the day, rain at night.

Rain fallen, '635 of an inch.

CHARLES HENRY ADAMS.

ERRATUM.—In our last number, page 791, col. 1, last line but three, for "1843," read "1840."

WILSON & OGILVY, 57, Skinner Street, London.

THE
LONDON MEDICAL GAZETTE,
BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, MARCH 10, 1843.

LECTURES

ON THE

THEORY AND PRACTICE OF
MIDWIFERY,

*Delivered in the Theatre of St. George's
Hospital,*

BY ROBERT LEE, M.D. F.R.S.

LECTURE XVIII.

*On the Diseases of Pregnant Women.—
The Causes, Symptoms, and Treatment
of Abortion.*

IF the current of maternal blood which flows through the cavernous structure of the placenta, in which the foetal capillary vessels are immersed, be obstructed by any cause even for a short time, the foetus dies from asphyxia, and is prematurely expelled from the uterus, or abortion takes place. In the latter as in the early months of pregnancy, the placenta is liable to various alterations of structure which disturb the processes of respiration and nutrition in the foetus, or which destroy altogether the relation between the mother and the child. Inflammation of the placenta has been described by various pathologists. From the application of cold and external violence to the abdomen, and sometimes without any apparent cause, they state that the decidua covering the uterine surface of the placenta, and the whole vascular structure of the organ, becomes red, dense, and gorged with dark-coloured blood, and that deposits of blood, of greater or less extent, are formed within it, or on its internal surface. In a case related by M. Brachet a number of points of red passing into grey hepatization were observed when the placenta was divided. Fourteen abscesses, varying in size from a small pea to a nut, were also found studding the placenta. The pus was thick and white, like that of a softened tubercle, and it was not

enclosed in a cyst, but formed between the fibres and vessels of the parts. Mr. Stratford relates the case of a woman who was attacked with pain in the back, extending down the thighs, in the third month of pregnancy. It had come on gradually with febrile symptoms, rigors, and uterine hæmorrhage. These symptoms increased, and after the expulsion of the ovum the tenderness in the region of the uterus subsided. The placenta was large, soft, and spongy, and its surface was covered with flakes of coagulated lymph. These were particularly marked on its inner surface, where some were loose and easily detached. The foetal membranes were thicker than natural, and the umbilical cord and foetus were loaded with serum. Andral and Cruveilhier also state that they have seen false membranes coating the uterine surface of the placenta, and its substance occupied with small abscesses. Dr. Wilde, who published his elaborate Essay on Diseases of the Placenta in 1833, believes that placentitis sometimes terminates in resolution, and that the organ returns to the healthy performance of its functions. At other times he thinks it proceeds to hepatization, suppuration, or gangrene, and that it sometimes terminates in induration of the organ of a mild or malignant nature. The disease, he says, may extend to the uterus, and cause the placenta to become firmly united to its inner surface by exciting inflammation of the lining membrane. Dull pains, he says, in the region of the uterus, sometimes intermitting, slight pyrexia, high-coloured urine, constipation, feeble movements of the foetus, sense of unusual weight in the region of the uterus, and premature expulsion of its contents, are the symptoms characteristic of placentitis. But the diagnosis of this and all other affections of the placenta he admits to be very uncertain and difficult. I have never seen an abscess in the substance of the placenta, or the slightest appearance of lymph, pus, or false membrane, either on the foetal or uterine surface of the

organ. I am therefore inclined to think that inflammation of the placenta is a rare disease, and that the other affections of the organ are, in all respects, unlike the diseases of the lungs of the adult.

Scrofulous tubercles have very rarely been seen in the human placenta: no example of this disease has come under my observation. In the *Archiv. Gén. de Méd.* June 1834, it is stated by M. Hardy that, in examining the body of a woman who died of phthisis in the sixth month of pregnancy, there were found, besides the tubercles of the lungs, small crude tubercles on the external surface of the uterus under the peritoneum, and eight or ten on the uterine surface of the placenta. Some of these were as large as a pea, two had almost the bulk of a filbert; they were of a whitish colour, and pretty resistant; they might have been taken, it is said, for scirrhous tissue, if the coexistence of tubercles in the lungs and uterus, and the same organ, had not shewn their connection with this latter species of morbid production. On examining the foetal surface of the placenta, a great number of small miliary tubercles, covered by the amnion, were felt by the fingers. The organs of the foetus were all healthy, and exhibited no traces of tubercles.

Sometimes calcareous or ossific deposits, of a yellowish white colour, are seen, not only on the uterine surface of the placenta, but throughout the whole mass to the membranes on the foetal surface. In some examples of this disease the deposits appear to be confined to the decidual arteries, but in others they pervade all the different structures. Though I have seen these to a great extent, the foetus has never appeared to suffer from them: but M. Desormeaux relates a case in which the whole of the uterine surface was covered with these concretions, and the nutrition was interrupted. Carus states that ossific deposits in the placenta are observed at Dresden from two to eight times in a hundred cases of labour. They are most frequently found, he thinks, in women of scrofulous or cachectic habit, or in those who are subject to nervous affections. These concretions, he affirms, are always found on the uterine surface, and are generally collected together in patches, and not scattered throughout its whole extent. Their consistence varies from that of albumen to that of stone. Their component parts are phosphate and carbonate of lime, phosphate of magnesia, and a very small quantity of sulphuric acid. M. Carus compares their formation to the covering of the egg in birds and in some species of reptiles.

Hypertrophy or atrophy of the placenta, and placental apoplexy, are much more frequently met with than any of the preceding diseases, and often cause the death of the foetus, in repeated pregnancies, about the

same period. It is necessary, however, to state, that disease of the placenta is not always the cause of this accident, for in several individuals who have had a number of dead children before the full period, no morbid alteration of structure has been discovered either in the placenta or in any of the other contents of the uterus. When the placenta is affected with *atrophy*, the disease has usually extended only to a portion of the organ, and the remainder has been left in a healthy condition. The foetal vessels, in the affected part, appear to be almost wanting in some specimens, and in others the part is so thin and transparent that it seems to consist only of the membranes. Detachment of the diseased portion of placenta, and hæmorrhage, are generally the first symptoms of this disease. I cannot believe that this condition depends on inflammation and absorption of the foetal vessels; it is much more reasonable to suppose that these vessels never existed at all, than that they had been removed by the "active exhalants of the uterus." In *hypertrophy* of the placenta, the whole mass of the organ, or particular portions of it, become harder and thicker than natural. The placental decidua is usually of a firm consistence, and of a yellow colour, and the whole uterine surface presents a peculiar cicatrized or puckered appearance, with the central part depressed, and the margin thick and elevated. On cutting into the substance of the hypertrophied portion, the whole cavernous structure is often found distended with layers of coagulated blood, which have been formed at different times, and resemble somewhat the layers of blood in aneurismal sacs. Most frequently there are several clots of different sizes found in different lobes of the placenta, and the fibrine in these clots is sometimes softened so as to resemble pus.

I have selected the thirteen following cases, from a great many which I have seen, to illustrate the causes, symptoms, and treatment of the organic diseases of the placenta, and their usual consequences, the premature death of the foetus, and its expulsion from the uterus. The greater number of the women in whom these affections occurred were in delicate health, though afflicted with no specific disease; in scarcely any of them had an injury been inflicted which could excite inflammation of the uterus and placenta, nor were they in a condition predisposed to inflammation, and in none were the symptoms such as to justify the conclusion that the changes of structure in the placenta were the consequences of inflammation; the symptoms of uterine irritation and congestion observed in some, being the effect, and not the cause, of the morbid state of the placenta and death of the foetus. The instances in which malformations of the

fœtus coexisted with disease of the placenta were not sufficiently numerous to warrant us in believing that they were necessarily connected together.

I.—August 31st, 1828. — A woman, æt. 37, about six weeks ago, while in the seventh month of pregnancy, began to experience a sense of constant dull pain in the uterus, and soon after perceived the abdomen to enlarge with unusual rapidity. The lower extremities became œdematous, the urine was secreted in sparing quantity, and the respiration difficult when in the recumbent position. The movements of the child were observed to be remarkably languid. All these symptoms having become more severe, and the abdomen greatly enlarged, labour pains commenced last night, and about five quarts of liquor amnii escaped, and soon after a fœtus which had been dead for some time. I examined the fœtus and its involucre with the greatest care, but could discover no appearance of vessels in the amnion, or lymph effused on its fetal surface. The chorion was also in a perfectly healthy condition: the placenta was of the natural size, but its whole mass was unusually soft in texture, and a considerable portion of it was converted into a dark-coloured substance, very similar to what is observed in portions of the lungs of the adult in pulmonary apoplexy. In a case of dropsy of the amnion, with hydrocephalus in the fœtus, which occurred in March 1828, the placenta was about half the natural size, and remarkably soft in texture.

II.—A lady about 30 years of age was delivered of a child in the seventh and half month, which shewed feeble signs of life. The liquor amnii amounted to six pints. The peritoneal sac of the fœtus contained 3iv. of serum, and the whole cellular membrane of the body was distended with fluid to the utmost extent. The pleura covering the lungs on both sides was studded with small tubercles, and on the surface of the liver and spleen the same appearance was distinctly perceptible. The placenta was fully three times the common size; its vascular structure appeared to be destroyed, and its place occupied by a soft yellow-coloured substance, like adipose matter. I have never since seen a placenta in the same condition as this.

III.—On the 10th, February 1833, with Mr. Stodart, I saw a young woman who became affected with dropsy in the seventh month of her first pregnancy. The lower extremities, trunk of the body, and face, were very œdematous, and there was distinct fluctuation in the abdomen. Difficulty of breathing, diminished secretion of urine, and aggravation of the dropsy, followed, though blood-letting, diuretics, and cathartics, had been employed. Labour took place

on the 17th. The child was dead and dropsical, and about one-third of the placenta was in an apoplectic state. Portions of the remainder were in an indurated and diseased condition. The dropsy speedily disappeared after delivery. It is difficult to explain satisfactorily the manner in which dropsy in the mother is produced by disease of the placenta, or why in some pregnant women the kidneys do not secrete the urine in the ordinary way, but resume their healthy function immediately after labour. This can only be produced by nervous sympathy, and if the functions of the stomach are often disturbed by this cause, there is no reason why the kidneys should not suffer from the same.

IV.—After having had several healthy living children at the end of the ninth month, a lady about the middle period of life, and in delicate health, without any organic disease, had repeated abortions in the early months, and three dead children in the seventh month of pregnancy. The movements of the child, after being quite peculiar, for some time always ceased two or three weeks before labour began. The cause of the death of the fœtus had not been ascertained. In July 1833, I was requested to see this lady, who was again seven months pregnant, and had begun to feel the same peculiar struggling or convulsive movements of the fœtus, which had preceded its death in former pregnancies; so closely had she watched the symptoms, that she knew the time when it expired. About a fortnight afterwards labour pains came on, and a small emaciated child, with the skin peeling off, was expelled, and soon after the placenta, which was five inches in diameter, and puckered up in the centre like a cancerous breast. Two of the lobes appeared healthy, but the remainder was hard and of a dusky yellow colour. She became pregnant again, but the same symptoms were later in appearing, and labour took place in the eighth month, before the child had died, and it was born alive, but weighed only, if I recollect right, four pounds and a half. It was, however, healthy, grew rapidly on being properly nourished, and is now a very beautiful child. The patient on the occurrence of the pregnancy had been removed from a damp to a dry residence, took chalk, and mercury, and sarsaparilla, and had leeches repeatedly applied to the region of the uterus. Another, and a second pregnancy, has since taken place, and the same disease has commenced in the placenta, but both children have been prematurely born alive, and in a healthy though emaciated state: they did not weigh more than half the average weight. I had resolved in this case to induce premature labour at the seventh and half month of pregnancy, if the symptoms

had manifested themselves at this period, and the same movements which preceded the death of the fœtus had been experienced.

V.—Dr. Burder wrote to me on the 1st of August, 1834, respecting a lady who had been some years under his care, and who more than once encountered premature labour after being delivered of several healthy children at the full period. The whole system, particularly the uterine system, he said was very relaxed. In the early part of marriage she had profuse leucorrhœa. For some time there had been sallowness of complexion and vitiated hepatic secretion. The plan of treatment adopted by Dr. Burder comprised mild mercurial alteratives, bitters with soda, the horizontal posture, the free use of cold to the loins, and much open air without fatigue. She had miscarried in January, and twice before went to the seventh month, and had dead children. She was now, August 1834, three months pregnant, and the treatment adopted did not prevent the death and premature expulsion of the child. In 1836, the same occurrence took place, and her medical attendant in the country sent the placenta to me, and I had *this drawing* made of it by Mr. Perry, which you now see, while it was in the recent state. The whole uterine surface was in a morbid condition, the centre being depressed like a cup, and the border thick, elevated, and puckered with numerous venous openings in the thickened decidua. The whole placental decidua was thick, hard, and of a yellowish white colour, almost like leather, and in the centre neither arteries nor veins were visible, but clots of blood were hanging out of the orifices of the veins on the margin, and fluid blood could likewise be pressed out of these. On cutting open the placenta the whole cavernous structure, particularly the part near the foetal surface, was filled with coagulated and fluid blood. Pregnancy again took place in 1838, and a feeble premature child was expelled. The same occurrence has since happened twice, and I have no doubt, though I had not an opportunity of examining the placenta, that in all the cause was the same.

VI.—On the 26th January, 1836, a woman, æt. 33, was delivered of a dead child of seven months, in a putrid state. The movements had ceased two weeks before. Both feet were clubbed. The funis was very thick, soft, and of a livid colour. The placenta, which was remarkably thick, was expelled without assistance. Near the insertion of the cord in the cavernous structure there was a clot of blood as large as a hen's egg, composed of different layers, which had obviously been deposited at intervals. The whole placental decidua was thick and hard, and irregular; in other parts of the cavernous structure there were smaller coagula of blood, which had become softened, and

looked at first sight like abscesses. This appearance I have witnessed to a much greater extent in other morbid placenta, which I have supposed might arise from softening of the fibrine, as has sometimes been observed in blood which has coagulated in obstructed veins. This patient had been delivered nine months before of a dead child in the seventh month, and both feet were clubbed. Fifteen months previous to this she had been delivered of a living child in the eighth month, who is now in good health, and has also club-feet. The condition of the placenta was not ascertained in the two first labours.

VII.—In June 1838, Mr. Pollard brought to me a dead fœtus of six or seven months, enclosed within its membranes. The movements had ceased, and there had been sanguineous discharge for some time before labour came on. On the uterine surface the placenta was white and hard, and there were several irregular projecting portions. At the apex of three of these elevations there was an opening which was evidently a decidual vein, and the decidua around these was remarkably thick and hard. Each of these apertures led to a large smooth cavity in the cavernous structure, which contained a hard coagulum of blood. The blood was not extravasated, but coagulated in the distended vessels in which it had been circulating; and this is, I believe, the case in all instances of placental apoplexy; at least it has been so in all that I have examined. It is a condition of the placenta more resembling aneurism than apoplexy. There had been no local or constitutional symptoms in this patient to justify the conclusion that these changes of structure in the placenta were the results of inflammation.

VIII.—On the 2d November, 1838, a lady in very delicate health was delivered, in the seventh month, of a dead child, the cuticle of which was peeling off, and the thorax, abdomen, and cellular membrane, filled with serum. The movements of the fœtus had gradually ceased five weeks before pain came on, and she had been exposed to no accident which could account for this. The placenta was expelled soon after the child, and the whole uterine surface was in a yellow indurated state; and there were masses of coagulated blood in different parts of the cavernous structure. This lady had miscarried at the commencement of the third month two years before, and the membranes of the ovum were all in a thickened diseased condition, and the cells of the chorion and placenta were filled with hard masses of coagulated blood. This disposition to disease in the ovum has disappeared altogether since her removal into the country, and she has been safely delivered of a healthy child at the full period.

IX.—On the 14th November, 1838, I saw a lady in consultation, also in an impaired state of health, who had been attacked early in the morning with profuse uterine hæmorrhage, about the end of the seventh month of pregnancy. The placenta did not present, and the membranes were unruptured. After the liquor amnii had been discharged, the hæmorrhage ceased, and a dead child was soon expelled, and also the placenta, which was in some parts much thicker and harder than natural. On cutting into these parts, which were remarkably dense, they were found to contain masses of coagulated blood, which must have been deposited at different periods. The whole placental decidua was thicker and harder than natural. There had been no tenderness about the uterus, fever, or any other symptom by which it could have been suspected, before the occurrence of hæmorrhage, that disease existed in the contents of the uterus.

X.—A lady, apparently of sound constitution, had two healthy children born at the full period, and afterwards was thrice delivered prematurely of dead children. The placenta was retained some hours after the birth of the second of these, and I was called to extract it, but succeeded only partially, in consequence of the firm adhesion of the placenta to the uterus, and the contracted state of the cervix. The portion that was removed from the uterus was in an indurated state; and I had no doubt the death of the fœtus, on both occasions, resulted from disease of the placenta. On the 9th September, 1839, I again saw this lady in consultation, who was seven months pregnant; and had no doubt, from the subsidence of the abdomen, the sanguineous discharge from the vagina, the absence of the sound both of the fœtal heart and uterine arteries, flaccidity of the breasts, and no movements having been felt by her for some time within the uterus, that the fœtus had again perished from disease of the placenta. It was proposed to induce premature labour; but as the general health did not appear to be suffering, it was considered more prudent to wait for natural uterine contractions, which soon took place after a short drive in a carriage. The placenta was hard, yellow, thicker than usual, and the cavernous structure was partially filled with coagulated blood. A portion of the placental decidua was covered with a thin dark firm coagulum of blood, which must have been formed some time before the expulsion of the child. Before the death of the fœtus in this case there was also no local or constitutional disease in the mother to indicate what was going on within the uterus.

XI.—In October 1811, I saw a lady in consultation, who had been married three years, and had been delivered of three dead

children; the first at the sixth, the second at the eighth, and the third at the sixth and a half month of pregnancy; and in all, the movements had ceased a considerable time before labour pains came on. No circumstance occurred to account for the first or subsequent premature confinements, and she had no complaint during the whole period of three years after her marriage, except a slight disposition to hysteria, and often an unpleasant sense of heat and irritation about the uterus, and occasionally around the umbilicus. There was no hardness, fulness, or enlargement about the abdomen; the uterus was in its natural situation, and perfectly healthy; the placenta had not been examined, and it was impossible, therefore, to tell from what cause the fœtus had died. Suspecting that there might have existed some disease of the placenta in all of them, a mild course of mercury and sarsaparilla, and a residence in a healthy dry situation, with regular exercise, was recommended and adopted; but the mercury soon affected the mouth, and was discontinued. The health, however, was as good as it had ever been about December 1841, when pregnancy again took place, and she continued without an unfavourable symptom, and feeling the movements of the child distinctly, till the 23d May, 1842, when she was attacked with violent sickness and vomiting, without any adequate cause, and which was not at first supposed to be connected with the uterus. The irritation of the stomach continued for twelve hours, in spite of all remedies, and then a dead child, with the cuticle peeling off, was expelled. The placenta was sent from the country for my inspection, and I never saw a finer specimen of hypertrophy and apoplexy of the organ. The edge at one part was more than an inch in thickness, and hard like cartilage; the whole central part was not half an inch in thickness, and seemed depressed like a saucer in the middle. Coagula of the fibrine of the blood were hanging out of the orifice of the great decidual veins on the thickened margin of the placenta; and when cut into, the cavernous structure here contained large hard coagula.

XII.—A lady, six months pregnant, apparently in a state of perfect health, went to Covent-Garden Theatre, and being alarmed by the firing of muskets on the stage, became faint, and returned home, with slight hæmorrhage from the uterus. In the course of a few hours uterine contractions came on, and a dead fœtus, with the morbid placenta you now see, was expelled. Rather more than one-fourth part of this placenta is in a healthy condition, but the remainder is so thin that it is almost transparent—indeed, is quite so in some parts, and seems to consist of nothing but the two layers of decidua and the amnion and chorion. The thin part must

have been some time separated from the uterus, though no hæmorrhage took place before the alarm in the theatre. The whole of the portion affected with atrophy was covered with a thick mass of blood, consisting of different layers of fibrine, which must have been deposited at considerable intervals. Those layers are recent which had been next the uterus, and those long deposited which adhere to the placenta. In another specimen of atrophy of the placenta, which I shall hand round, the history of the patient from whom it was expelled was very similar to that of the preceding. There had been few or no symptoms, before some trifling accident brought on uterine contractions. If the placenta be affected with this disease in a much less degree than here, the functions of nutrition and respiration may be carried on, though imperfectly, by the healthy portion of the organ; and the child may be retained to the full period, and be born alive, though in a weak emaciated state.

XIII.—It is not unusual, in cases of twins, for one child to die in the early months of pregnancy, from disease of the placenta, and for the other child, whose placenta is sound, to live to the end of the ninth month, and be expelled in a state of perfect health and well nourished. I now show you a preparation of the placenta of twins, one of which is perfectly healthy, with all its foetal arteries and veins minutely injected; and the other in a yellow indurated state, with a dead shrivelled foetus (squeezed into a flat form like a herring) of five months attached to it by a soft slender umbilical cord. The vessels of this cord, and of the diseased placenta, could not be injected. The dead foetus was retained in the uterus four months along with the healthy living foetus; and, from the symptoms, there was nothing to indicate that it had created any disturbance. The placenta were expelled spontaneously by the uterus, and the patient recovered perfectly. The child which was attached to the healthy placenta is now alive. Examples of this kind are not uncommon: several have fallen under my observation. Cruveilhier has described a similar case, and given a representation of the appearances presented by the healthy and atrophied placenta, which were adhering together, though not connected by vessels. One child is developed to the sixth, the other only to the second month. The uterine surface, says M. Cruveilhier, has the appearance of being cicatrized, and it had long been detached from the uterus. In a few cases which have been recorded, the dead embryo and diseased placenta have been expelled at an early period of pregnancy, and the other child has remained in the uterus to the full period.

Knots formed on the umbilical cord, and

great twisting of the cord upon itself, and firmly surrounding the neck and body of the embryo and foetus, may cause its death and premature expulsion. But the foetus itself is liable to be attacked with many diseases, and the embryo is often destroyed by an imperfect formation or arrest of development in its different organs. The germ, even before its vivification in the ovary, as Dr. Montgomery has observed, may have a morbid taint communicated to it from the system of the female in whom it resides, or from that of the individual with whom she cohabits, so that the tendency to disease or malformation sometimes precedes the first impulse that leads to the establishment of life. The brain of the foetus, the thoracic and abdominal viscera, may all be affected with malformations and diseases incompatible with life, and where the life of the foetus is extinct it becomes an extraneous body, and expulsive efforts on the part of the uterus are usually soon set up, and abortion ensues as the necessary consequence.

Symptoms and treatment of abortion.—

In the early months, when abortion is about to take place, there is more or less hæmorrhage, with pains at intervals like those of labour. Often there is no constitutional symptom observed before the discharge of blood occurs, and which is at first of trifling quantity and unaccompanied with pain. Where the embryo has perished from any of the causes above described, and where the decidua has not adhered firmly to the uterus, the dilatation of the os uteri and the expulsion of the ovum has been effected in a short time without much pain or hæmorrhage. In fifty-six cases of abortion, of which I have preserved the histories, uterine hæmorrhage took place to a considerable extent only in twenty-seven; in all the others the ovum was excluded from the uterus with little loss of blood. Where the membranes of the ovum are thickened, and their attachment to the uterus is unusually strong, sometimes several weeks or even months may elapse before the uterus, even when the orifice and cervix are dilatable, can exclude its contents; and not unfrequently, when it does succeed, the uterine decidua is torn away from the circumference of the placenta, and left behind. At a later period of pregnancy the expulsive process for the most part is preceded by unusual depression of strength and spirits, by attacks of faintness, sense of coldness in the pelvis, palpitation, flaccidity of the breast, a disordered state of the stomach and bowels, and other symptoms which indicate that the foetus is dead. Where there is an unusual afflux of blood to the uterus, or great congestion in its vessels, the uterine contractions and discharge are usually preceded for some days by rigors,

lassitude, heat of skin, thirst, loss of appetite, excited state of the circulation, and sense of weight in the pelvis and loins.

In all cases of threatened abortion we should endeavour to ascertain, if possible, the cause, and the probability there is of preventing the accident. If the symptoms have followed a violent mental or physical shock of any kind, and abortion had never occurred in the same individual before, and symptoms of increased determination of blood to the uterus preceded the discharge and pain, the prognosis may be more favourable than if the symptoms had occurred spontaneously after repeated miscarriages, and when the ovum was in a morbid state. In the greater number of cases, however, it is impossible to ascertain the cause with absolute certainty, and the first thing we have to do in cases of threatened abortion is to determine whether an attempt should be made at all to preserve the ovum, or whether the efforts of the uterus to get rid of its contents should not be assisted. The quantity of blood which has escaped, and the pain experienced, do not enable us in all cases to settle this point, for some women have gone to the full period who have had considerable hæmorrhage from the uterus, and pains like those of labour in the early months. Without being permitted to ascertain by an internal examination the condition of the os and cervix uteri in all cases of threatened abortion, it is impossible to say what is the condition of the uterus, or whether it is right to make an attempt to prevent it. Some women unwisely refuse to allow an internal examination to be made under such circumstances, and when this is so, we are left completely in the dark about the state of the patient, and the treatment which ought to be pursued. The hæmorrhage and pain may be trifling when the os uteri is soft and dilated, the neck obliterated, and the ovum has partially escaped. In all cases, therefore, if possible, and there are few where it is impossible, before you form or express any opinion, ascertain whether this be the state of the part, or whether the os uteri be closed and unyielding so that the finger cannot be introduced and the ovum felt. Where the orifice of the uterus is closed, an attempt should always be made to arrest the hæmorrhage and uterine contractions, and even sometimes when it is slightly open your efforts are successful. If the person is plethoric, and the circulation is excited, it is advisable to take some blood from the arm, to recommend the horizontal position on a mattress, with light covering and cool air; ice in a bladder, or napkins soaked in vinegar and water, over the hypogastrum; cold drinks and light food. Two grains of the superacetate of lead and a quarter of a grain of opium should be

given every three hours till the hæmorrhage diminishes; or infusion of roses with diluted sulphuric acid and a few drops of liquor opii sedativus at short intervals. If there is much pain it is often the best practice to begin the treatment at once with a full dose of the liquor opii sedativus.

Our object in the whole of the treatment is to check the hæmorrhage, and further detachment of the placenta, by promoting the coagulation of the blood in the vessels which have been exposed in the lining membrane of the uterus, and by preventing uterine contractions. All the remedies we employ should be directed to these objects, diminishing the flow of blood in the uterine vessels, and preserving the uterus in a quiescent state. It is necessary to persevere in this plan for a considerable period, at least till quickening has taken place, and the discharge has disappeared for several weeks. Then a better diet, and gentle exercise in the open air, may be allowed, but with extreme caution. If the discharge is renewed by the slightest exertion, becomes of a brown instead of a florid colour, and does not coagulate, and the signs of early pregnancy cease, all our attempts to prevent abortion will be unsuccessful. Then it is our object to get the orifice of the uterus dilated, the ovum detached from its inner surface, and expelled or contracted with as little pain and loss of blood as possible.

Opium and anodynes of all kinds are here injurious, by checking uterine action. Ergot is a far more appropriate remedy. It may be given in scruple doses, at short intervals, with advantage, where the os and cervix uteri are dilated, and the ovum is partially in the neck, and the uterus is indisposed to contract. I regret to say, that in the majority of these cases, and in a great many cases of uterine hæmorrhage and retained placenta at a later period, it has been given without the slightest effect being produced. Sometimes, in these circumstances, the ovum can be extracted with the fore and middle finger, employed as a pair of forceps, (they are the only safe forceps that can be used for the purpose,) introduced within the os uteri, but no advantage is derived from this unless the entire ovum be removed, which it is often difficult to do, unless a considerable part of it has been pressed into the orifice. The orifice may be dilated gently with the fingers at the same time, which has often the effect of exciting the uterus to contract and expel the ovum. But we meet with cases where there is great hæmorrhage, and the os uteri is not sufficiently dilated to admit of the introduction of the fingers, and the ovum has not descended into the cervix, and cannot be grasped, and the application of cold, and all the other means, have failed to check

the discharge. In these cases there is no remedy equal to a large soft dry sponge passed into the vagina, and firmly pressed up against the os uteri. If a sponge be squeezed into a conical shape, and covered with lard, it can be easily introduced, and in a number of alarming cases of hæmorrhage, where the ovum could not be extracted, it succeeded in effectually arresting the flow of blood, till the uterus contracted, and expelled its contents. There are few cases of abortion in which, by the diligent application of these means, you will not succeed in preventing any serious mischief from hæmorrhage. It is necessary, when treating a case of abortion, to examine all the coagula carefully, to know whether the ovum is still retained within the uterus, or, if the ovum has been expelled, to determine whether the uterine decidua has been left in the cavity. The embryo, with the amnion, chorion, and decidua reflexa, as I have already stated, often escape, and the uterine decidua is left for days, or even for weeks, within the uterus. When this is ascertained, the patient should be informed that a portion of the ovum is retained, and she should not be permitted to leave the recumbent position, and the os uteri should be examined daily, that the decidua may be removed when it has been forced into the cervix. It is impossible, I think, to treat abortion on scientific principles without an intimate knowledge of the structure, functions, and diseases of the human ovum, and I cannot omit this opportunity of again recommending the subject to your especial attention and study. By the examination of morbid ova great light is thrown upon subjects which would otherwise be involved in obscurity. In a great proportion of cases, in four only out of fifty-six, was the ovum in a healthy condition. There can be no doubt that the diseases of the ovum are most frequently the result of constitutional disorder in one or both patients, and that they do not arise from inflammation; but I must admit that in some cases the cause cannot be ascertained with certainty, and that all remedies are unavailing in preventing their recurrence in repeated pregnancies. In some patients who have had several abortions from thickening of the decidua, and coagulation of the blood in the cavernous structure of the placenta and chorion, by the application of a dozen or more leeches to the round ligaments every month, the free use of saline cathartics, by light diet and gentle regular exercise, the habit of aborting, as it is usually expressed, has been broken. In other cases this treatment has entirely failed, and tonics, wine, bark, iron in all forms, good diet, and the recumbent position, have been equally unsuccessful. Although it is not in our power to demonstrate the fact,

yet I have no doubt that the stream of maternal blood which flows through the placenta is sometimes in a vitiated condition, and unfitted for the functions it was intended to perform.

LECTURES

ON THE

PHYSICAL AND PATHOLOGICAL CHARACTERS OF URINARY DEPOSITS,

Delivered at Guy's Hospital, London,

By DR. GOLDING BIRD.

LECTURE IV.

Uric deposits traced to deranged cutaneous and gastric functions. Amount of azote evolved by the kidney. Case of uric gravel. Uric oxide—chemical characters of. Cystine—detection of—microscopic forms of. Oxalate of lime—of frequent occurrence—exists with excess of urea—microscopic forms of—predisposing and immediate causes of.

To sum up briefly all the evidence which has been accumulated regarding the predisposing causes of uric deposits (including under this generic term uric acid and its combination with bases), and which I explained to you at length in my last lecture; it may be stated that, excluding hereditary predisposition, the presence of a precipitating acid and excess of nitrogen, either from mal-assimilation of food or otherwise, must be regarded as the two immediate causes of the deposits under consideration; and of these immediate causes, both can be traced, by a pretty distinct chain of evidence, in the majority of cases, to imperfect performance of the functions of the skin or stomach. This view, you cannot fail to observe, has no novelty to recommend it; but has, what is of much greater value, the support of observation and of recorded experience. That the kidneys must be regarded as the most important organs by which nitrogen is filtered off from the system cannot be doubted; for the quantity of nitrogen expired from the lungs is very irregular, and, indeed, by no means even of constant occurrence. The statements made by M. Collard de Martigny, regarding the exhalation of nitrogen from the skin, are as yet by no means generally admitted; and this also is a phenomenon of only occasional occurrence, as appears from the observations of M. Collard himself. In considering the amount of nitrogen excreted by the kidneys in a given time, it is by no means fair to calculate its quantity from the weight of the urea and uric acid alone, as it enters as an important

ingredient into the composition of certain extractive and colouring ingredients of the urine. We know so little, however, of these matters, that it is impossible to arrive at more than an approximation to the average quantity of nitrogen excreted by the kidneys in twenty-four hours. Limiting, for the sake of illustration, the quantity of this matter to

that contained in uric acid and urea, I have calculated the weight of carbon and nitrogen thus removed in twenty-four hours. The per centage of nitrogen in urea and uric acid being taken respectively at 46·65 and 31·125, and of carbon at 19·97 and 39·875; and 100 cubic inches of nitrogen weighing 30·346 grains.

	Quantity excreted in 24 hours.	Nitrogen existing in	Carbon existing in	Nitrogen calculated in cubic inches.
	Grains.	Grains.	Grains.	Cubic inches.
Urea	255·0	118·95	50·92	391·4
Uric acid	8·1	2·52	3·23	8·3
Total	263·1	121·47	54·15	399·7

We thus learn that the minimum of nitrogen thrown off in a solid form from the system, by the kidneys, amounts, in health, to 399·7 cubic inches in twenty-four hours, in combination with 54·15 grains of carbon.

In illustration of the opinion that *excess* of uric acid or its combinations, and probably also urea, is due to some direct or indirect influence preventing the ready excretion of azotised matters, I may mention a circumstance I have more than once observed, that in cases of *impetigo sparsa*, and in one of superficial ulceration of the integuments of the hip of a strumous character, in both of which the purulent discharge was considerable, the application of an astringent wash, as a solution of the sulphate of zinc, has been immediately followed by a copious secretion of urate of ammonia in the urine; and which, in one instance, did not disappear until the discharge from the ulcerated surface was reproduced by the application of a poultice.

In concluding these remarks on the pathology of uric deposits, I wish to draw your attention to the following case, which occurred in the hospital three years ago. This attracted, at the time, great notice, on account of the enormous quantity of uric acid sand passed by the patient; and is now of peculiar interest on account of its demonstrating the truth of the statement that the imperfect state of the functions of the skin, and the mal-assimilation of azotized food (the latter a point so much insisted upon by Dr. Prout, and denied by Professor Liebig*), are often causes of gravel and calculous concretions. I have chosen this case to close

these remarks with, in preference to any of later occurrence, as it happened two years before these new views were disseminated, and consequently the treatment adopted cannot be supposed to have been biassed by them. I shall read it to you in the words of the gentleman who took notes of the case for me.

“John Lynch, æt. 37, admitted into Luke ward, under the care of Dr. Addison, October 2, 1839. He is by trade a porter in a warehouse in Spitalfields, and from the nature of his occupation is frequently exposed to alternations of temperature. When young he had lived freely, and partaken to excess of spirits and malt liquor, and has always eaten meat daily. His health, up to the present illness, has been excellent. His parents and relatives are healthy; none have suffered from urinary disease. On admission he stated that, in December 1838, he got very wet, and his clothes were allowed to dry upon him; this was followed by fever and profuse perspiration. On the next day he felt stiff, and became affected with universal rheumatic pains; from that time to his admission he has been subject to frequent returns of these symptoms. He complained of a constant pain in the region of the kidneys, increased by pressure and by flexing the trunk: there is some pain at the extremity of the penis. He passes water thrice during the day and once in the night; this is always accompanied by a copious discharge of uric acid gravel. This has continued almost constantly for twelve months. The urine is not coagulable, contains some mucous flocculi, and the deposit of gravel does not disappear by boiling. The tongue is clean and moist; complains of habitual heartburn; he has occasional bilious vomitings; the bowels are generally relaxed, and he is griped and purged on slight occasions, or exposure to cold. Pulse 78, natural.

From October 2 to November 27, his treatment consisted of purgatives, soda and uva-ursi, occasional mild mercurials, under

* “All the observations which have been made in reference to the influence of nitrogenized food on the composition of the urine, have failed entirely to demonstrate the existence of any influence of the kind.”.... “Gravel and calculus occur in persons who use very little animal food.”.... “Among nations which live entirely on flesh, deposits of uric acid concretions in the limbs or bladder are utterly unknown.”—LIEBIG’S ANIMAL CHEMISTRY, page 146.

which, however, the amount of sand increased. He then took the Dec. Alchamillæ with potash without much relief.

November 27 to December 18.—He used the warm bath twice a week, with P. Ipecac. Co. gr. viij. ex Julepo Ammon. Acet. ʒj. twice a day. Under this treatment he considerably improved; his skin acted profusely, the quantity of sandy deposit gradually decreased, and at the end of the month it completely disappeared.

January 10.—The urine, up to this evening, remained healthy, when he went out, caught cold, checked the action of the skin, and almost immediately after the uric acid deposit reappeared in as much abundance as formerly. He was again relieved by the warm bath and diaphoretics. He soon after suffered another relapse. Up to this period his food had consisted of the usual middle diet, including four ounces of cooked meat daily. Dr. Addison determined, therefore, to try simply the effect of prohibiting all animal food, and thus remove one source of the supply of nitrogen. He was therefore supported by arrow-root, sago, potatoes, and bread. The effects were remarkable: the sand disappeared in a very short time, and his urine remained free from all deposit to the time of his leaving the hospital on February 25."

The quantity of uric acid passed by this person was immense: I collected, on one occasion, nearly thirty grains from the urine passed in twenty-four hours. It was composed of large crystals of the cubical variety.

This case, gentlemen, is worthy your attention, as it points out the two important facts, that a free action of the skin and the diminution of azotized food prevented the formation of a copious deposit of crystalline uric acid gravel. Conversely, we may assume that a deficient action of the skin, and the presence of food rich in nitrogen, may be regarded as exciting causes of free uric acid, at least in a person predisposed to rheumatism, gout, or calculus.

I have extended my remarks on the nature of the uric acid diathesis to a considerable length, on account of the causes modifying the secretion of this matter in excess exerting a similar action on the production of most other deposits; especially on those of the first class, most of which may be proved to owe their origin to the very causes which influence the formation of uric sediments, modified only by the presence of some peculiarities which we have next to consider. The importance of being well acquainted with the general laws governing the development of uric deposits is well shewn, if any argument were wanted, by the fact, that in 342 calculi contained in the museum of this hospital, the nuclei in 262 consisted of uric acid or urate alone.

The next ingredient of calculous concretions to which I have to allude is the

Uric or Xanthic oxide.—This very curious substance has as yet been met with but twice as an ingredient in calculi; once by its discoverer, Dr. Marcet, and again by Professor Stromeyer. The calculus in which the former discovered it is lost; the other concretion, which Professor Stromeyer identified, was fortunately a rather large one; and its analysis has been carefully repeated by Liebig and Wöhler. You will find an account of their elaborate examination of this concretion in the forty-first volume of the *Annalen der Physik*. I translated this paper, and transferred its most important details into the pages of our *Guy's Hospital Reports*. The piece of calculous concretion I now shew you is part of the identical specimen removed by Professor Langenbeck from a boy at Hanover, examined by Professor Stromeyer, and subsequently analysed by Liebig and Wöhler, as I stated to you. For this very valuable addition to our museum I am indebted to my friend Dr. Robert Willis, who, in his zeal for science, procured from Professor Marx, of Gottingen, two of the remaining fragments of this unique calculus. One of these is deposited in the museum of the Royal College of Surgeons, and the other I now place before you. Although this fragment presents as crystalline an aspect as many uric acid concretions, yet I could not succeed in obtaining any appearance of crystals by slowly precipitating its solution in potash by an acid; the uric oxide fell in an amorphous form. I find a case referred to by Berzelius in his laborious *Jahres-Bericht der Physischen Wissenschaften* for 1840, and quoted from the *Archiv der Pharmacie*, vol. ii. page 182, in which uric oxide was said to have been detected in the urine. The patient laboured under diabetes: the urine deposited, on cooling, a greyish sediment, which dissolved in hot water and reddened litmus paper. It was soluble in nitric acid, and carbonated alkalies precipitated it unchanged. Berzelius evidently doubts this deposit consisting of uric oxide; and I confess I quite agree with him, as it is not the property of this body to dissolve in hot water or to redden litmus paper.

I have never satisfactorily made out the presence of this oxide in deposits, although I have more than once suspected it. There is a form of yellow sediment, consisting of minute yellow roundish granules, with a well-marked wax-like lustre, which is occasionally met with. It dissolves very slowly in nitric acid, with scarcely any effervescence, and leaves a yellowish-brown stain by evaporation. This I consider approaches closely to uric oxide, but I have met with it too rarely to be able to make up my mind as to the true nature of this sediment.

Should you meet with a deposit of uric oxide, you will experience great difficulty in distinguishing it from uric acid. To facilitate this diagnosis, I arranged the chemical characters of these two bodies side

by side in my paper in the Hospital Reports, and to this I would refer you for further information. I have selected the following characters from the others, as being most readily distinguished.

Reagent.	Uric oxide.	Uric acid.
Nitric acid.	Dissolves slowly without effervescence.	Readily dissolved with copious effervescence.
Solution in nitric acid, evaporated.	Leaves a yellow residue.	Leaves a pink residue.
Liquor potassæ.	Dissolves, and the solution is precipitated on the addition of hydrochlorate of ammonia.	Dissolves: the addition of a solution of hydrochlorate of ammonia does not affect it.

The next deposit in the first class of urinary sediments composed of the non-organized products of vital chemistry is—

Cystine or Cystic oxide.

I have already directed your attention to the ultimate composition of this interesting ingredient of calculous concretions, and its probable source. It differs, you will recollect, from other components of these bodies, in containing two atoms of sulphur, and as this substance always exists combined with protein as a necessary ingredient in albumen, fibrin, and the tissues organized from these elements of the blood, it is probable that cystine must be regarded as one of the results, although only an occasional one, of the secondary or destructive assimilation of the albuminous tissues of the body.

It must be confessed, however, that on account of the great rarity of cases in which this deposit occurs in a marked manner, our information as to these points is anything but satisfactory.

Although calculi composed of cystine have been known more than 30 years, and, although of rare occurrence, have been met with in sufficient frequency to allow their character to become generally recognized, yet this substance has been but rarely met with, or at least noticed, in urinary deposits. It is, however, probable, that if carefully looked for, it might be discovered in all the urine passed by patients labouring under a calculus composed of this substance. Cases of this kind have been described by Professor Stromeyer, Dr. Venables, Dr. Prout, Dr. Willis, and myself, and very lately Dr. Pereira has met with, I believe, two instances of its occurrence.

The urine containing cystine is often of a natural straw-colour, in some instances presenting an oily appearance, and occasionally possessing a green hue of some intensity, especially after repose. This remarkable colour is apparently due to the evolution of

the sulphur of the cystine. Occasionally a peculiar and rather pungently and fœtid odour is presented by these specimens of urine; but this is by no means constant. The density in the specimens I have examined varied from 1.012 to 1.0148. Deposits of cystine are white, or pale grey, and generally mixed with mucus, often with urate of ammonia. On applying heat to the urine, the urate if present dissolves, but the cystine undergoes no change until a little hydrochloric acid is added, when it slowly disappears. In all the specimens I have met with, as well as in one which occurred to Dr. Prout, cystine existed in solution, as well as in the form of a sediment; and on the addition of acetic acid it was freely precipitated.

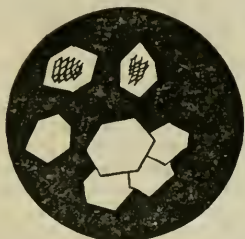
If you suspect the presence of cystine in a sediment, I should recommend you to boil it in water, to dissolve the urates that may exist. Digest a few drops of a solution of ammonia on the remainder, and let the ammoniacal solution evaporate spontaneously on a plate of glass. In this manner you will easily detect cystine by the shape of the crystals left by the ammonia.

A very ingenious mode of detecting cystine in mixed deposits has been proposed by Professor Liebig, founded on the presence of sulphur as an ingredient of this substance. To proceed according to this process, add some *liquor potassæ* to a weak solution of acetate of lead, in such quantity that the oxide, which is first precipitated, may be redissolved. Dissolve the suspected deposit in liquor potassæ, add to this some of the alkaline solution of lead, and boil the mixture; if cystine be present, a black precipitate will be formed from the formation of sulphuret of lead. As this test depends for its efficacy on the presence of sulphur, it is obvious that if any other substance containing this element be present, a serious source of fallacy will exist: hence it is useless if albumen, or any of its modifications, be present,

as pus, or even mucus; a copious deposit of sulphuret of lead being yielded by these substances when treated according to Liebig's process.

When the natural crystals of cystine, as they are found in urine, or the artificial crystals obtained by precipitating it by acetic acid, or by the evaporation of an ammoniacal solution, are examined under the microscope, they are found to exhibit a definite crystalline form. This is either a six-sided flat plate or lamina (Fig. 9),

FIG. 9.



either transparent all over, or much more generally opaque in the centre from hasty crystallization; or is met with in round patches with a crenate edge, and opaque in the centre (Fig. 10),

FIG. 10.



Not unfrequently the plates cohere, forming a multangular lamina. All these crystals present a fine display of colours by polarised light. Their solubility in ammonia and hydrochloric acid will readily distinguish them from other substances, as no other urinary deposit has yet been met with which is equally soluble in both these menstrua. A source of fallacy may arise in the detection of cystine under the microscope, by the evaporation of the urine, and the crystallisation of the common salt present in it. This salt, you are well aware, crystallises naturally in cubes, but when a little urea has been dissolved in its solution, it assumes an octohedral form. If, however, a small quantity be allowed slowly to evaporate from its solution in urine, it forms minute transparent laminae, which are generally three or six-sided (Fig. 11),

FIG. 11.



These, at first view, may be mistaken for cystine, but their perfect transparency, and, above all, their disappearing on the addition of a few drops of water, will at once discover their real nature. If urine containing chloride of sodium be *hastily* evaporated, these regular transparent laminae are not met with, but a series of tolerably regular crystals, in the form of elegant crosslets and daggers, are alone visible (Fig. 12). This, by the way,

FIG. 12.



affords a very good presumptive proof of the presence of urea in the fluid yielding these curious crystals by hasty evaporation. In conclusion, I may remark, that there appears some connection between the appearance of deposits of cystine and a strumous diathesis. In one case, at least, severe disorganizing disease of the kidneys was discovered. In the opinion of some, a connection has been supposed to exist between cystine and diabetes; without, however, I think, sufficient proof.

The next ingredient of urinary sediments which we have to examine is the

Oxalate of lime.

This is one of very great importance, as well from its frequent occurrence as from the severity of the symptoms with which it is often accompanied. Deposits of this substance are either made up of minute greyish calculous concretions, known as *hemp-seed gravel*, or of minute colourless, and often scarcely visible, crystals.

Dr. Prout was, I believe, the first to point out the frequent existence of oxalate of lime in the urine, and was generally led to suspect

its presence by the physical character of the fluid, than to prove it by the actual discovery of the crystals; at least, such appears to be inferred from the statement made in his valuable work, to which I have so often referred. Alluding to the physical properties of the urine, he states, that "when well marked, they are sufficiently definite to lead those who are conversant with the phenomena presented by the urine in *glass* vessels to *suspect* the presence of the oxalic acid diathesis; but they are *not* sufficiently definite to enable the most experienced eye, much less the inexperienced, to decide at once upon the point. For the urine of healthy individuals may, from accidental causes, such as peculiar articles of diet, &c., occasionally assume appearances so resembling those stated as not to be distinguished from them. The judgment, therefore, must, in all instances, be formed from the *general* tenor of the phenomena; and from the concomitant symptoms to be presently detailed; and these, taken together, for the most part, leave little doubt on the subject, even though an oxalate of lime calculus may not have been known to have passed from the kidney."

—(Page 60.)

By the application of the microscope, I have, however, succeeded in detecting the oxalate of lime, whenever it occurs, with the utmost readiness; and thus we are enabled to actually demonstrate its existence, instead of drawing inductions from symptoms to which very different significations may be given by different observers. I need not, gentlemen, enter into a detailed history of this matter, or of the cases in which I detected it, as these are on record in the pages of the *Guy's Hospital Reports*, and of the *MED. GAZ.* 1842. My experience in this subject has now been sufficiently considerable to have enabled me to discern the oxalate in upwards of 200 specimens of urine; and I can assure you that it is not only of frequent occurrence, *per se*, but is a very common ingredient, in small proportions, in deposits of uric acid or urates.

Regarding the general appearance of the urine containing the oxalate, it often presents merely the normal amber hue, often being rather pale: I have never met with a green-coloured specimen. In general, the density is rather high, exceeding 1020, and often reaching 1030. It is always acid, often very considerably so. The high specific gravity of the urine, which certainly is the rule in these cases, is owing, not to the presence of sugar, but to an excess, often a large one, of urea. Indeed, most of the specimens when above 1·020 yielded crystals of nitrate of urea in the course of a very few minutes after the addition of nitric acid. I have elsewhere stated my reasons for dissenting from the opinion Dr. Prout has advanced

regarding the cause of the presence of oxalate of lime in the urine. This distinguished physician traces it to mal-assimilation of saccharine principles. As, however, we now, by aid of the microscope, are enabled to *detect*, instead of *suspecting*, the presence of the oxalate, our information on this subject is more satisfactory than it previously was. I have never found oxalate of lime in diabetic urine; the white deposits, which have more than once been pointed out to me as composed of this salt, have always been composed of a very different matter. I took the opportunity of pointing out to you, in my second lecture, the probable mode in which oxalate of lime was produced, from the rearrangement of the elements of urea. It is demonstrable that the latter may, and often does, become converted into carbonate of ammonia, not only when urine is kept for some time, but even, as in spinal disease, in the bladder itself. Then, remembering the analogy existing between oxalic and carbonic acids, differing as they do merely in containing a different amount of oxygen, it is obvious that oxalate of ammonia may be presumed to be readily formed from urea by a re-arrangement of its elements in the manner I have pointed out. Of course, if oxalate of ammonia be found in the urine, a deposit of oxalate of lime will be the necessary result of the decomposition of the natural calcareous salts of the urine. I was led to this conclusion by a careful investigation of the numerous specimens of urine containing oxalate of lime which I had an opportunity of examining, and I published this opinion in the April (1842) number of our *Hospital Reports*, I confess, with great diffidence, in consequence of finding myself so completely opposed to the published views of Dr. Prout on this matter. In the following summer, Professor Liebig's work appeared, and he adopted an opinion similar to my own, but, guided by his peculiar theoretic views, referred the origin of the oxalic acid to a modification of the elements of uric acid.

When you meet with a case in which the oxalate is suspected, take care to have the night and morning's specimen of urine brought to you, the *urina chyli* and *urina sanguinis*; the former you will generally find the heaviest, sometimes exclusively containing the oxalate, but certainly always having it in the greatest abundance. Allow the urine to repose in a tall vessel, decant the great mass of the fluid, and pour some of the lowest most turbid portions into a watch-glass. Warm it over a spirit-lamp, giving the glass a rotatory motion, so as to collect the deposit in the centre of the glass. Remove the fluid with a pipette, and replace it with a few drops of water; a white glittering sediment will then be readily seen with

the naked eye. On placing it under the microscope, furnished with a half-inch object-glass, the characteristic octohedral form of the crystals of the oxalate will become readily visible.

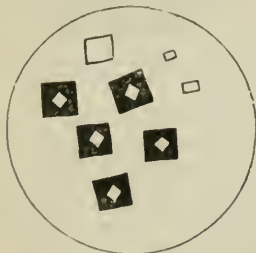
The appearances presented by these crystals vary somewhat with their size, and with their being dry or suspended in water. When of moderate dimensions, and examined under water, they appear (fig. 13.) as perfectly re-

FIG. 13.



gular octohedral crystals, formed by two four-sided pyramids, with a rhombic base, placed base to base. If, however, they are very minute, they resemble exceedingly small cubes, of which the square outline is alone visible. On the application of a higher magnifying power, however, their real octohedral shape becomes easily distinguishable. If the crystals be allowed to dry on a plate of glass before examination, they present a very curious appearance, owing to their only partially transmitting light, on account of the inclined sides of the pyramids reflecting all those rays which do not pass parallel to the axis. They then resemble (fig. 14.) quadrilateral crys-

FIG. 14.



tals having a square figure in the centre, the latter being transparent, and the former opaque; so that they resemble two concentric cubes, the inner one being perfectly transparent, and the outer one absolutely black; the angles of the former being opposed to the sides of the latter. On the application of a deeper magnifying power, these crystals lose this very curious appearance, and present their real octahedral figure.

Ocasionally, although rarely, a very remarkable variety of the crystals of oxalate of lime are met with. They appear like dumbbells, or like two kidneys, with their concavities opposed, and connected by a band, (fig. 15.) These are thickly striated with

FIG. 15.



numerous fine lines diverging from the centre like a zeolite. I suspect that these very beautiful objects are really minute calculous concretions, and not true crystals. They generally alternate or co-exist with octohedra. When they occur of some considerable length, as $\frac{1}{40}$ inch, they are often locked together, requiring some firm pressure to separate them, and feel gritty to the touch.

The addition of boiling acetic acid, liquor potassæ, or ammonia, does not affect these crystals of oxalate, whilst the phosphates are soluble in the former, and uric acid in the latter. The addition of a drop of hydrochloric or nitric acid readily dissolves them. If a small quantity of the deposit is collected on a slip of platinum and ignited, the carbonic oxide is evolved, and the oxalate of lime becomes converted into the carbonate, which readily dissolves in acids, with evolution of bubbles of carbonic acid gas. This may be observed in infinitesimal portions of the deposit under the microscope.

Regarding the nature of the symptoms attending the development of oxalate of lime, and their most frequent exciting cause, enough experience has now been collected to enable us to arrive at a tolerably satisfactory conclusion. The symptoms are always those of depression, with great irritability; and, although most frequently referred by the patient to the stomach, are nevertheless often of a more general character. A person, for example, will tell you, he has for weeks or months been losing flesh and health; he has become nervous and hypochondriacal to the greatest degree; he is tortured with constant feelings of impending misfortune; every thought, every action, is tinged with melancholy; his temper has become irritable and suspicious, his sexual desires and powers have failed, his appetite is capricious and uncertain. This, gentlemen, is the picture of an extreme case; but in very many cases the patient seeks relief long before the symp-

toms have accumulated to this extent. Even then, however, notwithstanding the early stage of the ailment, an expression of settled melancholy often strikes you on first seeing the person. I shall not here allude further to the symptoms presented by these cases, as I have placed on record numerous instances of this form of disease in the *MEDICAL GAZETTE* for the past year; and to these papers I would refer you for further information. One fact I have very generally observed, that, in the great majority of the cases I have witnessed, the disease was more or less directly traceable to some source of irritation connected with the sexual organ. Uterine disease in women and in men; repeated gonorrhœa, onanism, or excessive indulgence in intercourse, certainly appear to be frequent primary links in the chain of causation of this disease. I may remark, that the general symptoms detailed by Dr. Prout as characteristic of cases in which excess of urea is excreted, closely resemble those of the disease under consideration.

Regarding the immediate causes, I should refer them to the same as those which would produce an excess of urea or uric acid, and which I have before explained to you. The presence of the irritable condition of the nervous system, especially of the organic system, as shewn by the emaciation, &c. disposing the conversion of these more frequent

ingredients of urine into an oxalic compound. And this is supported by the fact of the great frequency of minute crystals of the oxalate in the common dyspeptic deposits of urate of ammonia. The treatment I have found most successful accords with this view. The use of nitric acid in gradually increased doses, the administration of minute doses of mercury, followed by mineral nervine tonics, as the sulphate of zinc and iron, or the oxide of silver, comprises the general routine of the treatment I have adopted. The warm bath, with a carefully administered course of colchicum, especially of the acetic extract, in doses of a grain, with as much of blue pill twice a day, has often been of great service in obstinate cases.

I cannot too strongly impress upon you the importance of becoming acquainted with this very serious and frequent form of disease, as the large number of these cases in which I have been consulted since I first announced the frequent occurrence of the oxalate of lime have convinced me of its being very frequently overlooked. In the majority of these cases I have been told by the medical attendant or friends of the patient that I had to investigate an obstinate case of dyspepsia, with emaciation and hypochondriasis, in which every remedy that had been tried, although it had relieved for the time, failed to effect any permanent good.

REMARKS ON OUTWARD APPLICATIONS TO ULCERS.

By W. H. O. SANKEY.

(For the *London Medical Gazette*.)

On examining the composition of those medicinal applications to indolent ul-

cers which have generally been denominated healing or stimulating, there will be found to exist between them a very striking similarity in chemical composition; all being chiefly composed of an inactive base, or combined with highly electro-negative elements, and which, in most instances, is oxygen.

To enumerate the most common :—

The red precipitate (quantitative analysis undecided)	Hg + N + O ₆ or 7
Yellow wash—Hydrated Perox. of Mercury	Hg + H + O ₃
Black wash—Protoxide of Mercury	Hg + O
Nitric Acid	N + O ₅
Nitrate of Silver	N + Ag + O ₆
Ung. Hyd. Nit. Pernitrate of Mercury	Hg + N + O ₇
Ung. Calamin. Ung. Zinci—Oxide of Zinc	Z + O
Cupri Sulphas.—Blue Stone	S + Cu + O ₄
Liq. Plumbi dilut.—Trisacet. of Lead	Pb ₃ + H ₃ + C ₄ + O ₆

To which may be added—the various plasters (Oleate and Stearate of Lead, Mercury, and Iron, containing each 2 eq. of the Metallic Oxide), and also steam, which has been recommended of late as an external application, and which has the property of absorbing oxygen and again restoring it as it condenses (Brande's Chem.)

The above and some others may be considered to form a class by themselves, while a second class would include several applications highly useful as dressings, containing an electro-negative element, but no oxygen; such as the iodide of lead, mercury, &c. The actions of these compounds may be explained by the properly that

iodine possesses of entering into combination with the same class of bodies as oxygen, and thus supplying its place, and so liberating a corresponding equivalent of that element. And here it may be remarked, that iodine is, as far as experience at present extends, the only other electro-negative which is not deleterious in its action on the animal tissues, and therefore is the only body that can be substituted for oxygen. It is, however, probable that bromine may be found to be useful.

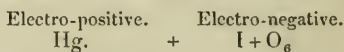
In the catalogue of outward applications to ulcers there remains the simple ointments, as Ung. Cetacei: the resinous ointments, Cer. Resinæ, containing but a very small quantity of oxygen, and being comparatively mild in operation, fat may be taken for the composition of one $C_{11} + H + O$, and resin for that of the other, $C_{49} H_{28} O^4$.—The rest of the external application contained in the Pharmacopœia* consists of ointments, &c. for peculiar purposes, as Ung. Sulphuris, Cer. Sabinæ, the consideration of which does not come within the scope of the present remarks.

In a closer examination of the properties of the foregoing applications to ulcers, it will be noticed, 1st, that their energy on the animal tissue, and their caustic properties, are in direct ratio to the readiness and rapidity with which they part with their oxygen: thus, strong nitric acid, nitrate of silver, nitrate of mercury, act energetically, as does also the deutoxide of hydrogen; while the black wash and the oxide of zinc are much milder applications. 2dly, It will be observed, the bases of those compounds which experience has taught us to prefer, are, when deprived of their oxygen, perfectly inert—as metallic mercury, lead, silver, zinc, iron, and that their affinity for oxygen is comparatively slight. And it is doubtless on account of the very strong attraction that potassium, sodium, calcium, &c., possess for oxygen, and their strong action on the animal lesion in the state of oxide, that render them and their salts inapplicable for dressings; and probably it is for a like reason that the salts of ammonia cannot be used.

Three qualifications, therefore, appear necessary to constitute a good outward application to an indolent ulcer. 1st, A substance containing a large proportion of oxygen, or of an electro-negative body. 2dly, A com-

pound that will part with its oxygen to the animal organism moderately slowly. 3dly, A compound whose elements, when its oxygen is abstracted wholly or partially, remains so far inert as not to possess chemical or solvent powers on the tissues, nor poisonous effects on the body generally.

If these conclusions be rightly drawn, chemistry would lead us to select many other combinations likely to be serviceable applications to indolent sores; some such have occurred to the writer, and he has consequently been instituting, with the aid of some professional friends, a series of trials with several compounds; the first of these, which has now been tried with marked usefulness, is the iodate of the protoxide of mercury, whose ultimate composition may be thus expressed:—



It contains thus 7 equivalents of electro-negative elements out of 8. It parts with its oxygen slowly, owing probably to its insolubility: it is therefore mild and lasting in its action: it may be used in the strength of ʒss. to ʒss. to the ounce of lard.

Another compound not generally known, but very useful, and for the power of which I am indebted to Mr. Hoffman, of this town, is the iodide of starch.

Mr. W. O. Chalk, of the Royal Sea-Bathing Infirmary, uses with great success the oxide of silver, made by addition of lime-water to a solution of Arg. Nitr., and using the black precipitated powder; pectic acid*, applied as a poultice, the writer has found to be quite equal, and perhaps superior, to the carrot, and easier of application. Several other chemical compounds suggest themselves—as the iodate of peroxide of mercury, more soluble than the proto-iodate, and therefore doubtless more energetic. The preparations of per-iodic acid, the bromates, mceonates, the precipitate formed by Tr. Opii. on goulard-water, is a useful dress-

* Pectic acid (the active principle of the carrot) would form an elegant substitute for the carrot-poultice, which cannot be always procured. It forms a better and softer poultice. It would be made extemporaneously by the addition of boiling water on the dried acid, and would be procurable at all seasons, in all climates and countries, and could be prepared at a very moderate price.

ing; mucic acid, alloxan, hydrated peroxide of iron, &c. &c.

The direct inference to be drawn from the fact of oxygenated, or, at all events, electro-negative compounds being required for indolent ulcers, is, that want of power in this character of sores is dependent upon the deficiency of those elements; or doubtless it may be occasioned by a superabundance of the other class, or electro-positive elements: this point, the *rexata questio* of the theory of respiration, is equally difficult to determine in the present case. It is probable, however, that the latter is the exception, and the former the usual occurrence. As the preceding remarks may appear to give too much importance to external applications, it may be as well to insist that deficient supply of oxygen occurs in two ways—1st, By a deficiency of oxygen in the blood, and 2dly, by deficient circulation, and is only to be met by such inward remedies as shall invigorate the constitution or quicken the circulation; as tonics, stimulants, Tr. Opii in small doses, as recommended by Mr. Skey: and that an artificial supply of the deficient element locally can be only an auxiliary; for of course it can only be used as long as the part is abraded, and its application is hindered daily as the ulcer lessens.

It requires great caution, perhaps, not to force chemical explanations of physiology too far, especially after the perusal of the recent work of Liebig. It is impossible, however, to refrain from a few further observations to which the preceding naturally leads. But as the present paper has already extended to too great a length, they will be necessarily very brief.

If indolent ulcers depend on deficiency of oxygen, does the opposite character of local affections depend on its excess?

Inflammatory local affections—inflamed and irritable sores, &c.—are attended with increase of circulation, and consequently, as corroborated by their intense red colour, by excessive supply of oxygen: and if, as Liebig states, animal heat is dependent on chemical action, we have evidence that there is not only excess of oxygen, but also excess of chemical action. Now experience has taught us, in these cases, to use cold applications, and this is

doubtless the best way of diminishing chemical action (Liebig, p. 261); but poultices are also used, (with or without a ferment): a poultice is a mass of vegetable matter, placed, by warmth and moisture, in the most favourable position for undergoing the acetous fermentation, which it cannot do but by absorption of oxygen. It is also worthy of remark, that when oxygen has thus been abstracted, suppuration is the result, and pus most probably contains a larger proportion of the electro-positive elements, as carbon, hydrogen, nitrogen, perhaps sulphur; but its exact analysis has not been determined.

If the above be the *modus operandi* of poultices, the addition of a small quantity of vinegar would be useful, as its presence promotes the acetous fermentation. A very old form of poultice consists of oatmeal and the dregs of the beer-cask, a compound strongly liable to acetous fermentation.

Again, to burns, in which chemical action has been promoted by increase of temperature, and is immediately continued by increased circulation, and consequently increased supply of oxygen, the remedy which retained the confidence of the profession for years, and is still preferred by many (though the old Linim. Tereb. is expunged from the Pharmacopœia) is wholly composed of electro-positive elements, namely, $C_{10}H_8$ or Oil of Turpentine.

Therefore, to angry and inflammatory ulcers, in which there appears a very inflammatory action, the oxygenated compounds would be prejudicial. Cold lotions, or poultices, for chemical reasons, would be indicated; or, if ointments are used, those only containing a preponderance of electro-positive elements, as Ung. Cetacei, Creosote, &c.; perhaps, also, the application of turpentine, or the non-oxygenated essential oils, as the Ol. Limon.

It should be borne in mind that internally, and consequently to the taste, the electro-positive elements stimulate as spirit, and the oxygenated compounds are the proper stimulants externally.

Margate, Feb. 10, 1843.

KING'S COLLEGE HOSPITAL REPORT

FOR 1842; WITH REMARKS.

By WM. AUGUSTUS GUY, M.B. CANTAB.

Professor of Forensic Medicine, King's College, London; and Physician to King's College Hospital.

(For the *London Medical Gazette*.)

THE report for the year 1842 is, in more than one respect, more complete than that of the two former years. The registration of the in-patients, commenced in the present year, embraces more than two-thirds of the entire number, so that the report more nearly represents the prevalent diseases of the district in which the hospital is situate. The number of cases analysed also exceeds, by more than 2,000, that of the year 1841. As the number of cases is so considerable, it has been thought advisable to distinguish the periods at which the several diseases have occurred; accordingly, a table is added, in which this distinction is made in respect to the larger groups of disease. Another table is given, illustrating the influence of sex on disease. Similar tables for each year, and for the sum of the preceding years, will be given in each future report.

The total number of patients registered on the books of the hospital, for the year 1842, is as follows:—

In-patients	1383
Out-patients.	11138

Total. . 12521

This number, which is exclusive of casualties, comprises 180 midwifery cases*.

Of the 1383 in-patients 93 died, being as nearly as possible 1 in 15, or 6·72 per cent. which, considering the high proportion that the number of patients bears to the size of the hospital, and the number of urgent cases admitted, is a very low mortality.

Some slight alterations have been made in the arrangement of the first table, and in the general abstract. In the reports of 1840 and 1841 pleurodynia was classed with rheumatic affections,

inasmuch as it has its seat in the muscular fibre. But as the pain in the left side, which is so common an accompaniment of the functional disorders of the female, though it has its seat in the muscles, is obviously neuralgic, it has been transferred to the group of neuralgic affections; whilst the cases of pleurodynia occurring in the male being merely a form of local muscular rheumatism, have been placed under that head. The cases of whooping-cough, too, which, in the former reports, were placed among the epidemic diseases, have been grouped, in the present report, with diseases of the chest, and delirium tremens with mental disorders. With these exceptions, the alterations in the first table are not such as to require comment. In the general abstract, catarrh and intestinal worms have been made separate headings, instead of being merged, the one in febrile affections, and the other in diseases of the intestines. These alterations will be carefully attended to when any use is made of the reports of the years 1840 and 1841.

Analysis of 10,438 Registered Cases of Disease, treated at King's College Hospital, during the year 1842.

	Male.	Fem.	Tot.
Febris continua	17	7	24
— intermittens	3	4	7
— ephemera	3	2	5
— dentitionis	6	7	13
— infantum remittens	136	159	295
Catarrhus	137	248	385
Variola	6	2	8
Varicella	14	5	19
Rubeola	10	14	24
— sequelæ	2	0	2
Scarlatina	14	16	30
— sequelæ	3	1	4
Erysipelas	15	19	34
Struma	73	61	134
Cachexia	3	4	7
Mollities ossium	10	5	15
Debilitas	46	158	204
Purpura	2	1	3
Plethora	3	3	6
Podagra	31	9	40
Anasarca	4	10	14
Ascites	4	2	6
Edema	7	14	21
Muscular Rheumatism	252	188	440
Articular Rheumatism	50	44	94

* The midwifery department is of comparatively recent establishment, which accounts for the comparative smallness of the number.

Epilepsy	21	23	44	Inflammation of the ab-			
Chorea	5	16	21	sorbents	1	0	1
Hysteria	0	39	39	Dysphagia	2	1	3
Catalepsy	2	0	2	Dyspepsia	74	163	237
Convulsions	6	3	9	Gastritis mucosa	23	97	120
Syncope	1	0	1	Gastrodynia	4	7	11
Hemiplegia	6	3	9	Hæmatemesis	7	12	19
Paraplegia	1	2	3	Organic disease of stomach	3	2	5
Paralysis (general and par-				Gastro-enteritis mucosa .	14	24	38
tial)	21	6	27	Diarrhœa	133	173	306
———agitans	1	0	1	Melæna	2	1	3
Weakness of the limbs . .	1	3	4	Tabes mesenterica	2	1	3
Spinal irritation	0	32	32	Dysentery	2	2	4
Pleurcodynia	0	87	87	Constipation	86	263	349
Muscular pain of abdomen	0	10	10	Colic, tympanites	5	8	13
Neuralgia	19	28	47	Colica pictorum	19	0	19
Hemicrania	2	5	7	Tormina	3	3	6
Sciatica	7	4	11	Hæmorrhoids	26	20	46
Pain in the feet	3	3	6	Prolapsus ani	3	15	18
——in the hands	0	4	4	Stricture of the rectum .	0	3	3
Melancholia	4	3	7	Enlarged spleen	0	1	1
Hypochondriasis	2	1	3	Peritonitis	3	3	6
Mania	0	4	4	Intestinal worms (unnamed)	22	31	53
Dementia	1	0	1	Ascaris vermicularis . .	25	29	54
Delirium tremens	13	5	18	———lumbricoides . . .	1	1	2
Drunkenness	1	1	2	Tænia	6	9	15
Determination of blood to				Diseases of the liver . .	4	2	6
the head	8	6	14	Icterus	14	11	25
Apoplexy	1	0	1	Gall stones	0	1	1
Vertigo	8	11	19	Diseases of the kidney .	9	5	14
Cephalæa	66	121	187	Hæmaturia	5	3	8
Hydrocephalus	7	8	15	Diabetes	3	0	3
Phrenitis	3	1	4	Cystitis	3	1	4
Other diseases of brain .	2	8	10	Irritable bladder	3	2	5
Cynanche tonsillarlis . .	43	71	114	Dysuria	6	11	17
Tonsillitis	22	33	55	Incontinence of urine .	6	1	7
Relaxed uvula	2	0	2	Retention of urine . . .	2	0	2
Laryngitis, acute & chronic	0	6	6	Calculus	11	1	12
Laryngismus stridulus .	1	0	1	Gravel	5	0	5
Cynanche pharyngea . .	3	1	4	Syphilis	156	65	221
———parotidea	5	7	12	Gonorrhœa and gleet . .	545	210	755
———thyroidea	0	3	3	Bubo	58	34	92
———trachealis	2	1	3	Swelled testicle	53	(—)	53
Ulcer of tongue	1	1	2	Excoriations	25	10	35
Diseases of the salivary glands	3	2	5	Condylomata	17	25	42
Bronchitis	137	238	375	Secondary syphilis . . .	62	74	136
Pneumonia	9	1	10	Hydrocele	18	(—)	18
Pleuritis	1	2	3	Varicocele	5	(—)	5
Dyspnœa	1	3	4	Stricture	39	(—)	39
Tussis	83	130	213	Other diseases of male			
Pertussis	10	11	21	organs of generation .	36	(—)	36
Phthisis	312	137	449	Periostitis	13	20	33
Hæmoptysis	14	17	31	Diseases of bone	12	5	17
Emphysema	9	3	12	———teeth and gums .	6	10	16
Gangrene of the lungs . .	1	0	1	———joints	51	70	121
Pericarditis	1	0	1	Diseases of the eye and its			
Hypertrophy	4	1	5	appendages	134	125	259
Palpitation	10	16	26	———ear	12	18	30
Other diseases of the heart	10	14	24	———nose	3	6	9
Cyanosis	1	0	1				
Phlebitis	1	1	2				

Skin diseases (unnamed).	61	48	109	Purulent discharge from the vagina of children	2
Strophulus	0	3	3	Pregnancy	8
Lichen	11	11	22	Abortus	13
Prurigo	1	11	12	Diseases of the vagina	6
Lepa vulgaris	13	47	60	Inflammation of the pudenda	4
— syphilitica	9	15	24	Prolapsus uteri	29
Psoriasis	18	29	47	Organic diseases of uterus and ovary	16
Pityriasis	2	0	2	Diseases of the mammæ	34
Urticaria	17	22	39	Ovarian dropsy	1
Roseola	1	1	2	Change of life	35
Erythema	4	18	22	<i>General Abstract.</i>	
— nodosum	1	2	3	Febrile affections	165 179 344
Pemphigus	3	3	6	Catarrh	137 248 385
Pompholyx	1	0	1	Contagious exanthemata	64 57 121
Impetigo	7	5	12	Struma, gout, &c.	168 241 409
Porrigo	116	92	208	Dropsies	15 26 41
Ecthyma	6	5	11	Rheumatic affections	302 232 534
Scabies	77	79	156	Convulsive diseases, &c.	35 81 116
Herpes	28	20	48	Paralytic affections	30 14 44
Rupia	2	0	2	Neuralgic affections	31 173 204
— syphilitica	0	1	1	Mental disorders	21 14 35
Miliaria	1	0	1	Diseases of the brain	95 155 250
Eczema	54	39	93	— throat, larynx, &c.	82 125 207
Aphthæ	12	17	29	— lungs	577 542 1119
Acne	7	6	13	— heart and arteries	28 32 60
Lupus	1	0	1	— stomach	113 281 394
Sycosis	4	0	4	— intestines	295 514 809
Nævus	0	1	1	Intestinal worms	54 70 124
Phlegmon	107	104	211	Diseases of the abdominal cavity	3 3 6
Abscess	86	57	143	— liver	18 14 32
Anthrax	19	5	24	— urinary organs	53 24 77
Ulcers of the leg	113	108	221	Syphilitic diseases	916 418 1334
— other parts	53	51	104	Other diseases of male organs of generation	98 (—) 98
Fistula in ano	7	5	12	Diseases of bones, joints, teeth, &c.	82 105 187
— perineo	1	0	1	— the organs of sense	149 149 298
Varicose veins	6	8	14	Skin diseases	457 475 932
Tumors	21	24	45	Inflammation and its consequences	386 330 716
Malignant tumors	3	4	7	Tumors, &c.	113 111 224
Glandular enlargements	25	10	35	Accidents and external injuries	453 271 724
Enlarged and inflamed bursæ	14	34	48	Attempts at suicide	1 6 7
Hernia	21	13	34	Diseases of females	(—) 606 606
Malformations	23	18	41	Total, 4941 5497 10438	
Wounds	84	33	117	As the number of cases registered during the past year is so considerable, and as the cases themselves may be fairly assumed to present a tolerably correct view of the sickness prevalent in the most central districts of the metropolis, I have prepared a table showing the number of the several diseases, or classes of disease, which occurred in the several months and quarters of the year 1842. (Table I.)	
Burns and scalds	40	35	75		
Contusions and sprains	249	157	406		
Concussion	4	1	5		
Dislocations	7	3	10		
Fractures	64	30	94		
Other accidents	5	12	17		
Attempts at suicide	1	6	7		

Diseases of Females.

Anæmia, chlorosis	33
Hyperlactatio, mimosi iniquita	97
Amenorrhœa	83
Irregular menstruation	9
Dysmenorrhœa	29
Menorrhagia	106
Leucorrhœa	101

TABLE I.

Showing the Number of Cases belonging to the different classes of Disease, which occurred in the several Months and Quarters of the year 1842.*

Diseases.	January.	February.	March.	First Quarter.	April.	May.	June.	Second Quarter.	July.	August.	September.	Third Quarter.	October.	November.	December.	Fourth Quarter.
Febrile affections	17	14	14	45	29	25	40	94	35	53	50	138	27	29	25	81
Catarrh	40	41	22	103	34	34	24	92	11	32	45	88	48	29	33	110
Contagious exanthemata	1	4	6	11	9	9	17	35	15	14	15	44	18	5	8	31
Rheumatic affections	29	31	28	88	50	43	59	152	50	47	55	152	46	52	56	154
Disorders of the nervous system	31	44	61	136	60	63	71	194	44	62	57	163	59	51	47	157
Disorders of the respiratory system	149	146	124	419	97	106	87	290	88	81	104	273	136	121	85	342
Disorders of the circulating system	3	4	2	9	4	5	4	13	6	3	8	17	3	8	5	16
Disorders of the organs of digestion	64	93	91	248	93	108	144	345	150	216	148	514	82	102	83	267
Disorders of the urinary organs	4	2	7	13	3	4	8	15	8	6	10	24	7	10	8	25
Skin diseases	36	82	67	185	89	89	113	291	86	103	75	264	64	81	72	217
Inflammation, and its consequences	54	64	67	185	58	63	58	179	56	67	75	198	53	56	57	166
Struma, goat, dropsy, &c.	21	20	22	63	29	46	57	132	43	68	62	173	33	19	34	86
Syphilitic disorders	91	127	86	304	89	112	131	332	125	164	147	436	127	136	124	387
Diseases of the osseous system	16	11	13	40	16	17	22	55	15	12	15	42	8	22	20	50
Diseases of the organs of sense	18	29	27	74	17	41	35	93	19	26	24	69	26	19	21	66
Accidents, tumors, malformations, &c.	60	66	72	198	65	85	96	246	104	117	90	311	73	73	82	228
Diseases of females	32	41	43	116	44	64	75	183	63	59	42	164	62	47	34	143
General Total	666	819	752	2237	786	914	1041	2741	918	1130	1022	3070	872	860	794	2526

* The months are all supposed to consist of 31 days, and additions have been made to those containing a less number; so that the Table presents a somewhat larger number of cases than actually occurred.

This table presents some points of interest. It will be seen that the febrile affections, the contagious exanthemata, the disorders of the organs of digestion, and the group of diseases of uncertain seat, comprising struma, gout, debility, &c. agree in the order of their frequency; the greatest number of cases of each class occurring in the third, and the least in the first quarter; and that the quarters come in the following order, beginning with that in which the fewest cases occurred:—*first, fourth, second, third*. The order of frequency in the case of catarrh is different, but if cases reported as debility, and of which the greater number may be fairly considered to fall under the head of catarrh, be included in that class, the same order of frequency will be found to obtain with catarrh as with the diseases already enumerated. If, moreover, the cases of debility be taken from those of the mixed group with which they are classed in the first table, the remainder of that group will be found to follow in the order 1, 4, 2, 3. The class of febrile affections, the contagious exanthemata, catarrh, diseases of the organs of digestion, and the mixed group, including struma, gout, plethora, &c. resemble each other, therefore, in the order of frequency.

All these diseases may be fairly supposed to acknowledge the influence of the seasons; but as the same order is observed to obtain in the case of a totally different group, viz. that of accidents, tumors, malformations, &c. in which the influence of the seasons is indirect and remote, it will be necessary to be very guarded in forming any estimate of the influence of the seasons upon health from these data, and to suspend the judgment till the reports of future years shall have confirmed or invalidated the conclusions drawn from the present report. It will be observed that the total number corresponds with the order of the classes now referred to; and that, taking diseases and accidents together, the quarters follow in the order 1, 4, 2, 3. The same order also obtains when the accidents are subtracted. It seems, therefore, safe to conclude that sickness is least prevalent in the months of January, February, and March; somewhat more prevalent in October, November, and December; still more rife in April, May, and June; and that there is most sickness in the

months of July, August, and September. The months come in the following order:—January, March, April, December, February, November, October, May, July, September, June, August.

The affections of the organs of respiration follow the inverse order of the classes just mentioned; the greatest number of cases occurring in the first quarter, and the least in the third. The quarters, therefore, stand as follows, beginning, as before, with that in which there is the smallest number of cases:—*third, second, fourth, first*.

Rheumatic affections, and diseases of the urinary organs, follow in the order 1, 2, 3, 4; diseases of the nervous system, of the skin, and those of females, follow the order 1, 4, 3, 2; those of the circulating system are represented by 1, 2, 4, 3; and this is the order of the syphilitic disorders. The great excess of this latter class of affections in the months of August and September, and in the third quarter, deserves a passing notice. In the group of which accidents, especially bruises and sprains, form by far the majority of cases, it will be seen that there is the same excess during the third quarter. It will be recollected that it is during the summer months that the greater number of crimes are committed against the person, that the greatest number of suicides take place, at least in most nations, and that the liability to attacks of insanity is at a maximum*. If future reports correspond with the present, we shall have, in the excess of syphilitic disease, during the hottest season of the year, an incidental confirmation of the facts which tend to prove the great activity of the passions during these seasons.

The foregoing remarks apply to the prevalence of *sickness*, in the widest acceptance of the term, and not to the *mortality*. On referring to the Registrar-General's table of mortality for the metropolis for 1842, I find that sickness is at a minimum and the mortality at a maximum in January; whilst the third quarter, which is the most sickly, ranks only third in point of mortality. In the bills of mortality, diseases of the respiratory organs, which chiefly determine the total mortality, are fatal in the following order, beginning with the quarter in which the deaths are fewest

* See Quetelet sur l'Homme, Book 3.

—3, 2, 4, 1—and this is the order of the frequency of those affections. The third quarter is not only more sickly, but also more fatal to life than the second, in consequence of the predominance of almost every severe disease except those of the organs of respiration.

The interest which attaches to this part of the report will be greatly increased by a comparison with the results of future years.

I have prepared another table, which exhibits the number of cases of the several diseases, or classes of disease, occurring in both sexes; to which I have added their per-centage proportions for either sex. By presenting a similar table in each year's report, and adding the result of the current year to those of the preceding years, I hope to be able to give a tolerably correct view of the liability of either sex to the several forms of disease. Some observations yet remain to be made on this subject in relation to individual diseases.

REMARKS.—I have brought together, in this, as in former reports, a few observations entered in the column of remarks, to which I add some comments on the relative frequency of those diseases which are most liable to vary year by year.

Febris continua.—The number of cases of continued fever entered in this, as in the two preceding reports, is very inconsiderable. There has, indeed, been a remarkable freedom from fever during the years 1840, 1841, and 1842, with every indication of an approaching epidemic in the present year. Already a larger number of cases of fever have come under my notice during the present than during the whole of last year.

Febris infantum remittens.—Cases of infantile fever were greatly in excess in the third quarter of the year; 119 out of 295 cases, or two-fifths, having been registered during the months of July, August, and September. There was also a great excess of cases of debility occurring in children during the months of May, September, and October, and it is remarkable that a very large majority of these were females.

Catarrhus.—In the report for 1841, a distinction was made between catarrh and influenza, in consequence of the marked epidemic character which the

disease assumed during the months of February and March; no less than 11 cases having been entered on each of two days. In the year 1842, catarrh could scarcely be said to be epidemic, for when the cases registered as debility, during the month of August, and which are too much in excess to be explained on any other supposition than that they were true cases of catarrh, are added in, there results a slight excess in the months of July, August, and September; but the numbers in the several quarters are so nearly the same as to preclude all idea of an epidemic. The total number of cases of catarrh and influenza registered in 1841 was 415 in 8029 patients, or about 1 in 19; the number registered in 1842 was 335, or 1 in 27 patients.

Erysipelas.—In one case of erysipelas faciei, occurring in a female, æt. 30, the menses were suppressed on the second day by cold, and the eruption made its appearance immediately after. In another case, a female, æt. 54, drank 8 pints of cold water, which was followed by shivering, and the eruption appeared on the third day.

Podagra.—One patient stated that his attacks had been always preceded by an extensive eruption of herpes labialis.

Muscular Rheumatism.—This disease, which was most prevalent in the last two quarters of the year, was comparatively rare during the months of January, February, and March; the smallest number having occurred in the month of March. The largest number occurred in the month of December, and on the 15th of that month, after a sudden change from severe cold to the mild temperature of spring, 4 cases were registered.

Epilepsy.—One case of this disease always commenced with a coppery taste in the mouth, which was soon followed by an impediment in the speech, and that by the fit.

Another case, which may perhaps be designated as imperfect epilepsy, came on at intervals of about three months, with a sensation of numbness in the left little finger, gradually extending along the arm, and accompanied by a sort of catching. It then extended to the mouth and lips, and the side of the face, the speech becoming affected so that he could not make himself understood. After these

TABLE II.

Showing the total number of cases belonging to the several classes of disease in both sexes; and the proportion per cent. which each class bears to the entire number of cases.

	1842.						1840-1-2.					
	Per centage.						Per centage.					
	M.	F.	M. & F.	M.	F.	M. & F.	M.	F.	M. & F.	M.	F.	M. & F.
Febrile affections	165	179	344	3.76	3.87	3.82	395	421	816	4.33	4.11	4.21
Catarrh	137	248	385	3.12	5.37	4.27	309	554	863	3.39	5.41	4.46
Contagious Exanthemata	64	57	121	1.46	1.23	1.34	137	158	295	1.50	1.52	1.51
Struma, Gout, &c.	168	241	409	3.83	5.22	4.54	351	407	758	3.85	3.97	3.91
Dropsies	15	26	41	0.34	0.56	0.46	33	68	101	0.36	0.66	0.52
Rheumatic affections	302	232	534	6.88	5.02	5.93	681	552	1233	7.46	5.39	6.37
Convulsive diseases, &c.	35	81	116	0.80	1.75	1.29	99	221	320	1.08	2.16	1.65
Paralytic affections	30	14	44	0.68	0.30	0.49	84	55	139	0.92	0.54	0.72
Neuralgic affections	31	173	204	0.71	3.74	2.26	55	301	356	0.60	2.94	1.84
Mental disorders (including attempts at suicide)	22	20	42	0.50	0.43	0.46	47	40	87	0.52	0.39	0.45
Cerebral affections	95	155	250	2.16	3.35	2.77	201	355	556	2.20	3.47	2.87
Diseases of the throat, larynx, &c.	82	125	207	1.87	2.71	2.30	152	246	398	1.67	2.40	2.05
— lungs	577	542	1119	13.14	11.73	12.42	1251	1227	2478	13.71	11.98	12.79
— heart and arteries	28	32	60	0.64	0.69	0.67	66	68	134	0.72	0.66	0.69
— stomach	113	281	394	2.57	6.08	4.37	249	763	1012	2.73	7.45	5.23
— intestines	295	514	809	6.72	11.13	8.98	604	1114	1718	6.62	10.88	8.87
Intestinal worms	54	70	124	1.23	1.52	1.38	102	159	261	1.12	1.55	1.35
Diseases of the liver	18	14	32	0.41	0.30	0.36	35	24	59	0.38	0.23	0.30
— urinary organs	53	24	77	1.21	0.52	0.85	89	50	139	0.98	0.49	0.72
Syphilitic disorders	916	418	1334	20.90	9.05	14.81	1617	785	2402	17.72	7.66	12.40
Diseases of the osseous system	82	105	187	1.87	2.27	2.08	216	222	438	2.37	2.17	2.26
— organs of sense	149	149	298	3.39	3.23	3.31	298	298	596	3.27	2.91	3.08
Skin diseases	457	475	932	10.41	10.29	10.34	933	1055	1988	10.22	10.30	10.26
Inflammation, and its consequences	386	330	716	8.79	7.14	7.95	887	818	1705	9.72	7.99	8.80
Tumors, &c.	113	111	224	2.57	2.40	2.49	235	281	516	2.58	2.74	2.66
Total.	4390	4619	9009				9126	10242	19368			

sensations had continued about half an hour, a severe and diffused headache supervened, which lasted for some hours. The patient, in other respects, enjoyed good health.

A third case presented that anomalous character which renders it difficult to refer it to any distinct head. It was that of a widow, æt. 55, who stated that, two or three times a week, and sometimes as often as twice daily, she was seized with a fit which, on her first attendance, presented the following characters. The right side of the face was affected with violent twitchings, and the right side of the body by shiverings. She retained her senses during the fit, but lost her voice. Aperient medicines were administered, which brought away some ascarides, and her fits in consequence became less frequent. She again presented herself at the hospital about a fortnight after her first application, in a fit which assumed a different character, consisting of incoherence, and rapid utterance of indistinct oral sounds. She was lost sight of.

Hysteria.—The small number of cases of hysteria entered in the table will excite attention. The reason that they are so few is, that the term has been used in a stricter sense than that in which it is commonly employed. Many cases, commonly classed with hysteria, will be found under the more definite head of spinal irritation, or *mimosis inquieta*; those cases only having been entered as hysteria in which fits commonly designated as hysterical were present. In one case of well-marked hysteria, I counted, during the paroxysm, 56 sobbing respirations and 160 pulses.

A case belonging to the class of spasmodic affections was interesting for the speedy relief afforded by simple purgatives. It was one of rigid contraction of the fingers, the thumb being forcibly drawn into the palm of the hand. The contraction was so strong as to resist a considerable force. The disease disappeared after free evacuation of the bowels, and recurred after renewed constipation. It was again removed by the same simple remedies.

Spinal irritation, pleurodynia, muscular pain of the abdomen.—In the report for 1841 some remarks were made on the diagnosis of muscular pains of the chest and abdomen, on the connection of those pains with spinal ten-

derness, and on the dependence of this latter condition on irritation of the mucous membranes. During the past year short notes have been taken of the observed causes of this tenderness of the spine, and of the reflected pain of the muscles or abdomen which accompanies it. I have found this spinal tenderness to be generally accompanied by pain in the abdominal parietes, more rarely by acute pleurodynia, and in other cases by pain in both these situations. The pain in the abdominal parietes, like that in the side, is generally confined to the left side; and when it extends to both sides, is more acute on the left. The pain is often so acute as to make the patient cry; and this has doubtless often caused such cases to be designated as hysteria. In some instances, it is true, genuine hysterical paroxysms co-exist with these pains; but such cases form the exception to the rule. Perhaps there is no suffering which so often makes the patient cry as that produced by muscular pains; and I have so generally observed this, that I look for muscular pain rather than for any deeper-seated mischief, whenever females present themselves in tears. In the diagnosis of pain this fact is worthy of attention, as pain, connected with more severe disease, rarely expresses itself by tears.

The ascertained causes of spinal irritation, in connection with muscular pain of the abdomen or chest, in 33 cases, were as follows. Constipation in 4; diarrhœa in 4, of which 1 was complicated with hysteria; dyspepsia in 4, of which 1 also was combined with hysteria; gastritis in 1; gastro-enteritis in 1; leucorrhœa in 4, of which 1 was combined with prolapsus uteri; dysmenorrhœa in 1, in which dry cough was present; gonorrhœa in 1; and cystitis in 1. Constipation and leucorrhœa were jointly present in two cases, in one of which there was scanty menstruation; constipation and menorrhagia in 1 case, and here hysteria was also present; constipation and amenorrhœa in 1; constipation and dysmenorrhœa in 1; constipation and gastritis in 2; constipation and dysuria in 1. Diarrhœa and leucorrhœa were combined in 2 cases, in 1 of which there was dry cough; gastritis and menorrhagia in 1; gastritis and dysmenorrhœa in 1. In two cases there was no assigned cause.

In one case, in which spinal irritation was accompanied by dry cough, leucorrhœa was present; and in one case epilepsy was found in combination with spinal irritation and leucorrhœa. This short statement may serve to show the cases in which spinal irritation may be looked for. Whenever a female presents herself, complaining of acute pain in the chest or abdomen, and, as often happens, expressing her suffering by tears, the spine should be examined, when tenderness will generally be discovered in some part or other of the vertebral column, and most commonly in the dorsal region. The connection of this spinal tenderness with the pain will appear on striking the tender portion of the spine, when pain will be felt not only in the tender spot, but darting towards the affected muscle. When cough is present, it will be produced in like manner by striking the tender portions of the spine. These pains will be often found in combination with that peculiar state of nervous system described under the name of *mimosiis inquieta*; in which case it will be necessary to combine the treatment proper to that condition of system with the counter-irritation to the spine, the local applications to the seat of the pain, and the remedies adapted to remove the cause of both.

Neuralgia.—One recent case of *tic douloureux*, occurring in an anemic female, recovered in six days under the use of Ferri Sulph. gr. v., Ext. Conii, Ext. Gentianæ, aa. gr. iiss. t. d. with gentle aperients.

Hemicrania.—In a female, æt. 34, pain in the side of the face, occurring at irregular intervals, and lasting for variable periods, was followed by shivering accompanied by perspiration. She had had the ague 20 years before. Cured by quinine.

Dementia.—One marked case of dementia occurred in a boy, æt. 10, in consequence of the earthquake panic. A second case in an errand-boy, æt. 16, followed fright. A case of melancholia in a female, æt. 43, also came on, after slight premonitory symptoms, in consequence of the earthquake panic.

Delirium tremens.—The close resemblance which this disease sometimes bears to dreaming was well illustrated in the case of a clerk, æt. 40, who had formerly been intemperate. He came into the out-patients' room

shedding tears profusely, and looking about him in a timid suspicious way, but perfectly quiet, and with a manner quite free from excitement. He was scarcely seated before he rose to examine the stove, which he said was hissing at him. He then took the arm of the chair for a scorpion, and began to scratch with a view to dislodge and kill it, complaining that it had crept into its hole. He next began pinching his thigh, saying that something was biting him. On the porter who had not previously spoken to him, coming into the room, he enquired whether he had not threatened to kill him. Every thing that he did was as quiet and methodical as if it did not concern him in any way, and he put his question to the porter as if it were of no sort of consequence whether he killed him or not. On being questioned he said that the room seemed to him to be full of lobsters. He complained that he could not sleep at night, and was desirous of having some one to sleep in his room. This man recovered under the use of large doses of laudanum and stimulants. Another case of *delirium tremens* occurred in a female, æt. 28, who stated that during the last week she had, for the first time, drank to excess, and that since that time every thing she thought of seemed to be spoken in her ears, her words were repeated after her, and she heard persons as she went along saying that she was mad. She thought she had been robbed, looked suspicious, but was withal perfectly tranquil. Her hand trembled, and she said that she had not slept for two nights.

This coincidence of imaginations calculated strongly to excite the feelings and passions, with a manner perfectly free from all excitement, is a very remarkable feature of many cases of *delirium tremens*.

Phthisis.—A similar marked disproportion in the number of cases of this disease, occurring in the two sexes, which was observed in former years, occurs in 1842; the number of males being 312, and that of females 137. In 1840 the numbers were, of males 101, of females 43; in 1841, there were 237 males to 122 females. The per centage proportions, calculated as in Table 11. for males and females respectively, was, in the year 1842, males 7.11, females 2.97, both sexes 4.91. In the three years, 1840-1-2, the total numbers

were—males 650, females 302; and the percentage proportions, 7.12 for males, 2.95 for females, and 4.92 for both sexes. The close correspondence between the single year, and the sum of the three years, renders it probable that the proportions now given are near the truth. It would appear, then, that the liability to pulmonary consumption, for the two sexes, as far as it can be estimated by the attendance at an hospital, is in the proportion of about 7 to 3; that in males, consumptive cases form about a fourteenth of the whole number of cases, in females about a thirty-third, and in the two sexes jointly, about a twentieth. The number of cases of phthisis was greatest in the first quarter, and least in the last, the numbers for the four quarters respectively being 135, 124, 109, 85. The number of applications was greatest in January and May, and least in November and December. The number both in January and June was 47, in November 27, and in December 17. The males were in excess in the first quarter, and the females in the third.

The value of the pulse as suggestive of phthisis was well shown in one case, where the patient's only complaint was headache. The pulse, though only 68 in the sitting posture, was extremely small and quick, and the long interval existing between the beats caused it to be estimated much lower in point of frequency. This led to an examination of the chest, when there was found great dulness on percussion under both clavicles, with tubular respiration under the right, and crepitus and prolonged expiratory murmur above and beneath the left. The small and quick pulse, with or without increased frequency, should always lead to an examination of the chest, even when no other symptom of phthisis is present. If to these characters there be added great increase of frequency, there is the strongest probability of phthisis. These observations of course apply only to the male, as the pulse is naturally more frequent in the female, and is increased in frequency by almost every complaint, functional or organic, to which she is subject.

Gastrodynia.—A case of intermittent neuralgic pain in the pit of the stomach is recorded as occurring in a bricklayer, æt. 69. The pain came on every morn-

ing about half-past 10 o'clock, and continued 6 hours. It was not confined to the pit of the stomach, but extended downwards towards the umbilicus. He was ordered two grains of quinine three times a day. After taking the medicine two days, the pain, instead of coming on at half-past 10, was postponed till 1 o'clock. At the end of 9 days he reported that he had had no pain since the day before, when it lasted one hour instead of six. He continued free from pain, and was discharged cured on the 18th day.

Mimosis inquieta.—This term aptly expresses that restless, uneasy, nervous state into which females are apt to be thrown by sudden shocks, by long-continued anxiety, or by slow drains upon the system. In the report it is classed with hyperlactatio, which is one of its most common causes, but it might perhaps be more correct to separate them. This term has been used in preference to the cause itself, in those cases where the cause is not of the nature of a disease, as well as in those where the state of system is more remarkable than the cause which has produced it.

The group of symptoms which characterise this state of system in its most marked form are—palpitation, with a small, quick, and frequent pulse; dyspnoea; tremblings, shiverings, occasional flushings of the face, sudden perspirations, wandering pains, fixed pain at the top or back of the head, a sensation of cold water dripping on the back of the head and down the spine; giddiness, loss of recollection, low spirits, ill-founded apprehensions (sometimes a fear of committing some great crime), sleep disturbed by hideous dreams, from which the patient wakes startled, starting at the slightest noise; anorexia, flatulence, constipation.

All these symptoms are not present in all cases, but many of them are usually combined. There is sometimes tenderness of the spine, with reflected muscular pains, and sometimes, though rarely, well-marked hysteria.

The principal causes of this state are the following:—fright; long-continued anxiety or grief; great fatigue; long watching; change of life; suppression of the menstrual discharge in persons of middle age; debilitating discharges, as hyperlactatio, leucorrhœa, menorrhagia, diarrhœa; repeated loss of blood. It is also frequently present

during convalescence from debilitating diseases. In one case of a female, æt. 39, the disease came on after a walk of 77 miles in three days. The treatment of this disease, in addition to the removal of the ascertained cause, and the regulation of the functions of the alimentary canal, consists in a combination of tonics and sedatives. I have found the following mixture extremely beneficial.

Acidi Sulph. dil. ℥x.—xx. ; Tinct. Opii, ℥v. ; Tinct. Digitalis, ℥x. ; Infus. Quassiae, ʒj.—ʒiiss. ter in die.

This mixture may perhaps owe part of its efficacy, when the disease is caused by debilitating discharges, to the mineral acid.

Nearly all the symptoms now described under the title of "mimosis inquieta," occurred in two young men who had injured their constitutions by sexual and other excesses. The same treatment was adopted with the best effect.

The Report for 1843 will be more complete than the present one, inasmuch as the registration of in-patients will be complete, instead of embracing, as in the present Report, only about two-thirds of the cases. I shall also hope to introduce into the Report other points of interest.

A NEW MODE OF EMPLOYING THE NITRATE OF SILVER IN CERTAIN OPHTHALMIC AFFECTIONS.

To the Editor of the Medical Gazette.

SIR,

THE enclosed communication, on the use of nitrate of silver in certain affections of the eye, appeared in a number of the Gazette des Hôpitaux of last year, by Mons. le Docteur Desmarres, Professeur d'Ophthalmologie in Paris. This gentleman expressed a wish that it might likewise appear in some English medical journal ; I therefore forward it to you, for insertion in the MEDICAL GAZETTE.—I am, sir,

Your obedient servant,

WILLIAM CAMP, M.D. Edin.

50, Green Street, Grosvenor Square,
Feb. 22, 1843.

The question we would first propose to ourselves is, what is the action of the nitrate of silver on the membranes

of which the eye is composed. If it be employed *weak*, it diminishes the vitality of the organ, lessening the vigour of the circulation, and, as to its action, it may be compared to the action of cold water applied to our tissues. If, on the contrary, it be employed *strong*, it acts as other caustics, whose action has great analogy to that of intense cold, in the sense that they arrest, as does this latter, the circulation in parts affected by obliteration of the vessels in a greater or less degree.

If we endeavour to observe at first the action of cold water on our tissues, we find, "that when applied to any region, it constantly determines, but in different degrees, a revulsion of the blood towards the deeper parts of the body,—an effect made evident to the observer by the decoloration, the coldness, and the diminution in volume, of the part, the capillary circulation of which is slackened, and its vitality lowered. This driving back of the blood towards the deeper parts presents variations in its continuance proportionate to the continuance of the action of the cold water on the region where it has been applied, and as soon as this is discontinued, the return of the blood whence it had been expelled by the influence of the cold, is accomplished with a force which is in relation to the degree of temperature of the water itself, and of the tendency which the region preserves to undergo congestion afresh. We say, then, that reaction takes place, a state which it is important to avoid, since it acts in the same sense as the dynamic condition which we seek to control by the application of cold water,—unless, indeed, it be applied externally, with a view to excite this same reaction. The circulation is then seen to be active in that part, as the redness, the swelling, and the elevation of temperature, plainly demonstrate."

If, now, we study the action of intense cold, we see that it acts in the same manner, but with more energy, and in direct proportion to its intensity. Many opinions have been offered to explain its action. M. Poiseuille advanced, in 1836, "that in the interior of the vessels there is a thin layer of liquid, and that this thickens in proportion as the temperature is lowered, so that there results a constantly in-

creasing obstacle to the progress of the globules of the blood; then, the vessels of the periphery receiving less blood, this fluid stagnates in those of the viscera, and of the interior of the body. The same opinion has been advanced by M. Guerard."

On the other hand, Messrs. Berard jeune et Denouvilliers express themselves as follows on the reaction which takes place in a part suddenly chilled (*Compendium de Chirurgie*):—"All these symptoms—the swelling, the redness, the itchings—may continue to increase, and then a true inflammation is established. This is variable according to the intensity of the cold, and presents exactly the stages which are observed in burns. Thus, there is a simple erythema, or a phlyctena is produced, and, after the removal of the epidermis, the surface may suppurate and inflame."

These quotations express so perfectly the opinion that we have formed by an exact and frequent observation, that we have thought it well to give them verbatim.

Is it necessary at present to develop more at length this idea, namely, that there is a similitude of action on our tissues between astringents and cold water, between caustics and intense cold? The following definition of astringents, by Cullen, will suffice to remove all doubt. They are, says this author, substances which, applied to the human body, produce contraction and condensation of the soft parts, and thereby increase their density and their force of cohesion; they tighten the tissue of the organs with which they are brought into contact, and determine a local turgescence by approximating the walls of the vessels to the fluids contained in them." As to caustics, do they not destroy the parts they touch? In this their action does it not resemble, in some respects, that of intense cold, which, like them, produces an eschar, a true gangrene, local and circumscribed, which varies in the rapidity of its formation, its colour, its extent, its thickness, its density? In pursuing our idea, do we not arrive at the conclusion that we have sought? That the nitrate of silver acts as astringents, or as cold water, if it be weak—or as caustics, and as intense cold, if it be strong. Then, if we employ it weak, or as an astringent—that is to say,

we employ cold water—it will be necessary to take certain precautions, so that the reaction so serious in diseases of the eye do not supervene, as it would infallibly in a limb submitted during an hour, for example, to the application of cold water, which is suddenly discontinued.

It is easy now to imagine what would infallibly happen, but by the most happy chance, when, in an inflammation of the external tunics of the eye, without intolerance of light (a lymphatic conjunctivitis, a superficial vascular inflammation of the cornea, an atonic ulcer, &c.,) we prescribe a weak astringent collyrium to be applied by some drops daily. The blood feebly and momentarily expelled from the capillaries, soon arrives there again with a force and rapidity in inverse proportion at once to the astringency of the collyrium, and to the frequency of its instillations into the eye. This organ, from the moment when the first drop of collyrium is introduced, becomes injected throughout, and the parts, healthy until then, submitted to its action, react in like manner to the parts diseased, resist sometimes a first application, and resume their normal colour, but soon actually inflame, if the instillations are repeated, especially at considerable intervals. Thus the conjunctiva reddens, then inflames, the sclerotic coat becomes covered with vessels, the pupil contracts, photophobia and epiphora supervene, and all the serious chances of a violent external ophthalmia, very often of an internal ophthalmia more or less intense, with their troublesome consequences, remain to the practitioner. It is then necessary to have recourse to the antiphlogistic treatment, particularly to free bleedings, to oppose this terrible reaction, which might have been prevented by a better treatment, and to which, now, the limits cannot be assigned. Am I deceived in stating, that it is precisely because attention has not been directed to this reaction hitherto that the administration of the remedy has so often failed in cases where it was notwithstanding indicated?

In general, I do not employ the nitrate of silver in a very weak form, for the reasons above given, because the reaction is so much the more to be feared as we employ remedies less strong. It must not be supposed, how-

ever, that I administer it as a caustic, as the partizans of the ectrotic method recommend, for I have known that it is better always to preserve a proper medium between these two extremes. The reason of it is, perhaps, in the first, that an eschar once formed removes the subjacent tissues from the action of the collyrium, and that nothing then hinders further the reaction from compromising all. We may judge of it, besides, by the swelling of the eyelids which in this case follows the application of the caustic. The strength of the collyrium which I employ varies from 40 to 90 centigrammes of crystallized nitrate of silver to 10 grammes of water. These proportions reduced to English weights are as follows: namely, from 7 to 15 grains of nitrate of silver to $2\frac{1}{2}$ drachms of water, according as the photophobia is less or more, according also as it is more or less recent, as in inveterate scrofulous ophthalmic affections; for example, cases in which we act more vigorously at first. In this proportion the collyrium but seldom whitens the mucous membrane of the eye. (this, however, sometimes happens with the eyes of very young children, but then I take care to diminish the strength of the nitrate of silver, recommending more frequent instillations). This done, the most important indication to attend to is to prescribe to the patient repeated instillations into the eye, every half hour during twenty-four hours without interruption. In some rare cases it is necessary to go on with the instillation every quarter of an hour during the first two or three hours of the treatment. I take care to forewarn the patient that, during these two or three hours, he will experience considerable pain, because this is the usual period necessary for tolerance to become established; but that after that time the pain will become very supportable, and will be followed by evident amelioration, which is invariably the case. In this manner the diseased eye is not liable to reaction, because the force of repereussion acting in a continued manner, maintains the vessels in a state of contraction which this reaction is unable to overcome. If I can see the patient five or six hours after the instillation of the first drop, I judge by the state of the organ whether or not the reaction tends to supervene, and then, if not, I continue; if it do,

on the contrary, I increase the strength of the collyrium, one and a half, two, or three grains of the nitrate of silver. If I cannot see the patient until after twenty-four hours, I prescribe immediately a collyrium a little stronger, and I have nothing to fear. In some cases, in which I cannot trust to the perseverance or the good will of the patient, I recommend fomentations of iced water to assist the action of the collyrium. However, I ought to say this has but seldom occurred to me in more than sixty cases. After twenty-four hours, reaction does not supervene, but the intolerance of light is not always subdued completely, although the injection of the external tunics of the eye is usually diminished; and in this case, as in the other, I increase the strength of the collyrium, and after forty-eight hours, rarely more, the ophthalmia is at its second stage—I mean the acute form no longer exists. Then the instillations are repeated less often—every hour, for example; at length discontinued, and then replaced by a general appropriate treatment.

This method has, over others, the great advantage of avoiding an antiphlogistic treatment more or less long and energetic, in cases of patients affected with intolerance of light, always directed, or at least very often, against the photophobia itself. It is of the greatest moment to have recourse to it, especially when we have to treat lymphatic or scrofulous individuals, in whom repeated losses of blood are not without danger. It replaces, in itself alone, bleeding, leeches, purgatives, and the entire pharmaceutical and surgical arsenal, in the acute period of ophthalmia. It arrests with certainty the increase of inflammation, and opposes advantageously the intolerance of light, in the space of from twenty-four to thirty-six hours. Moreover, we may always have recourse to it without inconvenience in case of the reappearance of the ophthalmia, whilst it is not always possible to resort to local or general bleedings.

Do not let it be supposed that, as an exclusive partizan of the nitrate of silver, I maintain that this remedy, employed in this manner, can supersede every other remedy: far from it; for all is not done when the photophobia is subdued: on the contrary, it is then that all the sagacity of the

practitioner is needed, and all his skill in ophthalmology, in order to employ remedies capable of restoring the organ to its normal condition. It is then that purgatives, slight astringent collyria, and, at a later period, cauterization of the granulations with sulphate of copper, if there be any under the eyelids, are of the greatest service; and lastly, it is at this moment that we should commence an appropriate general treatment.

CASE OF

STERCORACEOUS VOMITING SUCCESSFULLY TREATED.

To the Editor of the Medical Gazette.

SIR,

IT is not of very frequent occurrence that cases of obstruction of the bowels, in which stercoraceous vomiting supervenes, have a favourable issue. The following case is interesting, both from its being an exception to the general rule, and from the cause which induced the obstruction. And it is singular that just about ten days before the case now reported came under my notice, another very serious case of intestinal obstruction, brought on by eating the dried and burnt corn from which Hunt's coffee is made, was successfully treated by me. In this last case, however, the grave symptom of stercoraceous vomiting was not present, although the obstruction had lasted ten days.

The report of the case which Mr. Doughty has furnished in the accompanying letter, which he has addressed to me, is so concise and distinct, that I have little or nothing to add to it, and shall simply solicit a place for it in the columns of your distinguished journal. I shall only observe, that I ordered the tobacco infusion and smoke enemata on the supposition that the formidable symptoms which were present might *possibly* be owing to some obscure hernia, although the most careful examination, both on Mr. Doughty's part and my own, could not detect any *palpable* evidence of the existence of any such accident.

I am, sir,

Your obedient servant,

ROBERT DICK.

Upper John Street, Golden Square.

4, William Street, Knightsbridge,
February 10, 1843.

Dear sir,—I think you saw M'Kay's daughter seven or eight days after my first attendance, during which time I gave her repeated doses of calomel and black draught; the first dose I think was three grains of calomel given on a Thursday night, and following morning aperient draughts. I saw her on the Friday: the calomel was retained in the stomach, but the draught vomited; she complained of pain in the head and nausea. I ordered four grains of calomel to be taken that evening, with the senna draught in the morning, which I relied on operating; consequently did not see her till Monday morning, when I learnt that the draught had been vomited, and no action on the bowels; she slept a good deal; the pulse was pretty regular; but still complained of vertigo. I again repeated the calomel, combined with cathartic extract and aperient draught. When I saw her on Tuesday, the latter had been vomited, and the sickness increased, with hæmatæmesis. Saline mixture, with small doses of hydrocyanic acid, was then given, to allay the nausea. I saw her on Wednesday; she told me the saline mixture made her more sick. Small doses of calomel were then given every three or four hours, with a strong aperient dose occasionally. It was after this that the stercoraceous vomiting commenced, and you saw the case, and ordered the turpentine enema, with castor oil, and, I think, calomel in small doses. The following day you prescribed six ounces of mercury, and the tobacco enema; sixteen ounces of which, Pharmacopœia strength, I administered. This produced syncope and cold sweat. This was on the Friday. I think on the following day, eight ounces more mercury was given, and the tobacco smoke, to the extent of five or six whiffs, was administered; and in the course of the day, croton oil per mouth and rectum; and the following, or second day after, the tobacco smoke was again used, and after it an assafœtida enema was given; but I forget the respective days. After the latter was given we began to have copious evacuations, and the whole of the mercury passed.

In the evacuations there was a substance very much like coffee grounds, and, on questioning Mrs. M'Kay, I learnt that her daughter was in the

habit of chewing whole coffee very freely; she would keep it in her pocket for that purpose. Is it not probable that this was the primary cause of this obstinate case of obstruction?

I am, dear sir, yours truly,
E. D. DOUGHTY.

To Dr. Dick.

CASE OF
SPINAL CURVATURE CURED BY
SECTION OF THE DORSAL
MUSCLES.

To the Editor of the Medical Gazette.

SIR,

I WILL feel obliged by your inserting in an early number the following case of successful cure of spinal curvature by operation, should you deem it worthy of a place in your excellent journal.—I am, sir,

Your obedient servant,

ROBERT COCKS, M.D. Surgeon.

Dundee, Feb. 27, 1843.

J. L. Alyth, Forfarshire, æt. 25, strumous habit, nervous sanguine temperament. Stated that he was bred a stone-mason, became a private soldier in 1834, left his regiment without leave, and, in consequence, was placed in solitary confinement. His cell was cold, damp, and not heated by any means. He was detained in it for two months, viz. from November 1835 to January 1836. On being liberated, his health was found to be considerably impaired, and the Army-Surgeon having shortly afterwards pronounced him to be unfit for service, he was discharged. For the three following years he occasionally complained of severe pain in the back, near the sixth dorsal vertebra, and pain in the abdomen and left shoulder. Medicine afforded him temporary relief. In February 1839, the pain in the back became so severe that he was unable to lie in bed, and generally passed the greater part of the night walking in his apartment. The only position in which he experienced ease was when he supported himself on two chairs, with his back near the fire. At this time the spine became deformed. In March 1840, he had lost all power of motion in the lower extremities, and was admitted a patient in the Dundee Royal Infirmary, where he remained four weeks. In April 1841, Dr. Boyter of Blair-

gowrie, a retired naval surgeon, of great ability and experience, having visited him, and being of opinion that the principal cause of the symptoms was the contraction of the lumbar muscles, recommended that he should consult me. I was called to see him on the 6th of May following; Dr. Fenton, a physician residing in Alyth, and Mr. Paton, a surgeon belonging to Dundee, accompanied me. We found him lying on his back in bed, with a strap stretched across his abdomen, and fastened to the sides of his bed, so as to prevent his limbs from being drawn upwards to his occiput, this being the only position he could occupy without their doing so. On examining his spine, I found the cervical portion in its natural healthy position: about the sixth dorsal vertebra a considerable projection existed: from this point to the sacrum there was great anterior curvature of the remaining dorsal vertebrae and lumbar portion of the spine; so great that the upper lumbar vertebrae, situated at the centre of the curve, could scarcely be distinguished under the integuments and muscles. From the dorsal curve to the sacral promontory a tense band of muscles was stretched along at each side of the spinal column, that on the left side being most prominent. The limbs required to be held down, but when the bands of tense muscular fibres were pressed with the hand, the inclination to turn them upwards was irresistible, and could only be overcome by considerable force. The patient was perfectly unable to move himself in bed, neither could he stand erect without support: when his limbs were flexed he could extend them without assistance, and the integuments over the projections in the dorsal and sacral regions were livid and partially denuded of cuticle, from the pressure of his body being principally on them. He was much emaciated, and his general health greatly impaired. On consulting with my medical friends they concurred with me as to the propriety of dividing the tense sacro-lumbar muscles.

The patient being laid on his face, with several pillows under the abdomen, so as to render the muscles of the back as tight as possible, the lower extremities extended, and kept in that position, I introduced a long straight

bistoury at the outer edge of the muscular band, on the left side, about three inches from the spine, on a line with the second lumbar vertebra, and thrust it on wards under the integuments, until it came in contact with the spinous process; then, turning the cutting edge to the muscles, in the act of withdrawing the knife the fibres were divided, and parted asunder several inches with an audible sound. The external wound was then closed with strap. A little tightness being still apparent on the same side, the knife was again introduced over the last rib, and using it as a guide, the muscular fibres of the sacro-lumbalis and longissimus dorsi were freely divided, the external opening being closed as before. The corresponding muscles on the right side of the spine were divided in a similar manner, opposite the second lumbar vertebra; a bandage was then applied so as to retain the dressings *in situ*. During the operation the patient lost little blood, and felt no pain of any consequence. After the division of the muscles, there appeared no inclination to turn the limbs upwards. I now quote from my case-book:—

“May 21st.—The external openings on the left side united by the first intention; that on the right discharged a little dark-coloured blood for several days, but on the sixth day after the operation it had also completely cicatrized. From this time he gradually improved, and on the fifteenth day after the section of the muscles, he was able, with some assistance, to walk a little way from the door of his cottage.

“June 20th.—The divided muscles are again united; no pain is experienced on pressing them with the fingers, but a little tension is apparent in the longissimus dorsi of the right side, probably arising from some muscular fibre remaining undivided, now become tense in consequence of the straightening of the spinal column. There is also a tendency to turn up the right limb, and invert the foot. He can walk a considerable distance with the aid of an ordinary walking-cane.

“July 15th.—The tense fibres of the sacro lumbalis and longissimus dorsi muscles were again divided by me as formerly; and the wound united by the first intention.

“25th.—Dr. Fenton writes, that the

patient walked half a mile on the 23d, and that no turning up of the right limb, or inversion of the foot, had existed since the last operation.”

This poor man continued steadily to improve; and in the summer of last year I considered him perfectly recovered. He has been for some time employed as a village schoolmaster, standing for many hours daily without any inconvenience to himself; and he occasionally walks six miles, or upwards, on business or pleasure, without experiencing any difficulty whatever.

ESSAYS ON THE DISEASES
OF THE
HEART, GREAT VESSELS, AND
CIRCULATING FLUID.

By R. WILLIS, M.D.

Lecturer on the Principles and Practice of Medicine in the Aldersgate-Street School of Medicine, late Physician to the Royal Infirmary for Children, &c.

[Continued from p. 774.]

(For the Medical Gazette.)

Of Thrills, or Purring Tremors.

THE vibrations excited in the column of circulating fluid which have thus far been studied through the medium of the ear, sometimes become distinctly appreciable by the sense of touch. Vibrations of this description are described under the title of *tremors*, *purring tremors*, or *thrills*. An excellent idea of their general character is conveyed to the mind through the hand applied to the body of a cat, when it is making that purring noise so familiarly known as the expression of satisfaction by the animal. The thrill which is felt in the walls of the chest in speaking or singing in the bass clef, is always similar to that which accompanies certain diseases of the heart and arteries.

Corvisart appears to have been the first who noticed a tremor or thrill in connection with diseases of the heart: he speaks of it as “a peculiar tremor (bruissement) difficult of description, sensible to the hand applied over the precordial region, and also, but in a less marked manner, to the finger engaged in feeling the pulse.” He held, that its occurrence was connected with contraction and ossification either of the left auriculo-ventricular, or of

the aortic orifice of the heart. This view of Corvisart has been amply confirmed by all his successors in the field of observation: purring tremor in the precordial region almost certainly denotes contraction of one or other of the orifices—in the great majority of instances, of the aortic orifice—of the heart. Laennec, for instance, speaking of the purring tremor, says, "It is met with in almost every case in which there is contraction, to any extent, of the orifices of the heart;" but then he adds: "I have frequently met with it, however, where there was no organic disease of the heart; in which case, it was very probably connected with a particular modification of the innervation." This is an explanation that will scarcely be admitted in the present day; but the assurance that there may be purring tremor without organic disease, forces us upon the conclusion that its causes differ in different instances; and that it is most necessary to be aware of this fact in order to escape errors in diagnosis of the most unpleasant kind.

We have already seen, that whatever excites vibrations in the column of circulating fluid is competent to produce preternatural murmurs; it is precisely the same with reference to thrills or purring tremors, which are now known to occur in circumstances precisely similar to those in which bellows and rasping murmurs are heard, now in connection with organic disease—contraction of the aortic orifice in especial, and again, in connection with anæmic and chlorotic states, in which the blood is poor in quality and insufficient in quantity, and in which it is consequently more than commonly apt to be thrown into a state of vibration. The causes, in fact, of murmurs and of tremors are identical, and the one very constantly accompanies the other; a blowing murmur of considerable intensity may, indeed, be heard without any appreciable tremor; but a tremor is scarcely perceived unaccompanied by a distinct harsh murmur.

The causes of tremor are usually within the heart, and situated, probably four times in five, in the semilunar aortic valves. M. Gendrin* has lately

spoken of a murmur and thrill which, although intrinsic and organic in fact, he treats lightly, and as of no great significance, in so far as the patient's chance of life is concerned. "The auriculo-ventricular valves," he says (p. 126), "more frequently that of the left than of the right orifice, may become the seat of a lesion of their extremity, which produces a tremor (*frottement vibratile*) of the highest intensity. This lesion consists in an excessive development of the valve at its summit. In this case, the membranous edge forms a margin turned in towards the cavity of the ventricle, where it stands out in relief, two or three millimetres thick; the tendons of the columnæ carneæ pass behind this projecting edge, and are inserted at its base. The margin of the valve thus amplified is smooth in different degrees, often thickened, generally fibrous, and sometimes fibro-cartilaginous. This valvular implication, which is frequently connected with no other, if it be not an hypertrophy of the columnæ carneæ, occasions purring tremor of the loudest kind. The thrill is systolic, and the accompanying murmur so distinct, that in the majority of cases it is heard by the patient, and sometimes even by the medical attendant, without the aid of auscultation. The blood, whilst pouring into the ventricles during the diastole, meets the mitral and tricuspid valves in a state of relaxation, and its course is not interrupted by the salient margin of the summit of the valves, which is turned back towards the cavity of the ventricle; there is consequently no unusual sound at this period. But when the systole takes place, the auriculo-ventricular valves are rendered tense, and brought into the most favourable conditions for entering into vibration, the current of blood determined by the action of the ventricles encountering the projecting and now tense margin of the valve, causes it to vibrate. In this way is produced the systolic tremor in those simple lesions of the valves which have just been described. The tremor is so well marked, that it scarcely escapes the auscultator, or even the patient; it causes much alarm, and yet it is the indication of a trifling affection, which we have never seen occasion other mischiefs than anxiety in practitioners and patients. We are consulted several

* *Leçons sur les Maladies du Cœur et des Grandes Artères, recueillies et publiées sous ses Yeux par MM. Colson et Dubreuil Hélon. 8vo. 1841-2.*

times every year in similar cases; we are guided in our diagnosis by the intensity of the systolic tremor, conjoined with the absence of all signs of hypertrophy of the heart, or of contraction of the orifices, or of disease in the sigmoid valves, and of any disturbance in the circulation beyond a little palpitation now and then, due rather to the anxiety of the patient than to any disease of the heart."

I confess that I do not entirely understand this passage, nor the way in which the deformity of the valves described can produce purring tremor, save in connection with regurgitation; and surely regurgitation, whether upon the left or the right auricle, is no trifle. If this puffing of the edge of the auriculo-ventricular valves has never occasioned other mischief than anxiety to the practitioner, and alarm to the patient, how was its existence discovered? To have known that the purring tremor which existed during life was connected with such a state of the auriculo-ventricular valve, the patient ought to have been cut off by some intervening disease, and the actual state of things about the heart ascertained. Possibly this was done; but there is no record of the fact.

Thrills or purring tremors occurring in connection with other symptoms of disease of the heart, are indications not to be mistaken of the serious nature of the affection. In men of a certain age, and who have lived freely, they are very frequently the surest evidence of an aneurism of the arch, or of dilatation of the aorta, accompanied with roughening of its internal surface. The situation of the point of greatest intensity in the tremor, guides us in our diagnosis in regard to the particular orifice or part that is its seat. Thrills or purring tremors, again, when they occur in alliance with anæmic and chlorotic states, especially when they are continuous, are not to be viewed as of more serious import than the soft blowing murmurs which are heard under the same circumstances. It may chance, nevertheless, that anæmia or chlorosis may be associated with some serious disease of the heart, such as valvular imperfection, hypertrophy, &c., induced by antecedent rheumatic endo- or peri-carditis.

Thrills or purring tremors are not always nor necessarily intrinsic to the heart; they are sometimes perceived of considerable intensity in connection

with inflammation and lymphatic deposition on the surface of the pericardium. They are then dependent on, or associated with, a friction murmur. The vibration, which is their essence, is engendered by the rubbing of the opposite surfaces of the pericardium upon one another, no longer separated by a layer of fine lubricating synovial fluid, but by one of a more watery nature; or perchance they are in immediate contact, and covered, in addition, with honey-comb laminæ of coagulable lymph.

Purring tremor is apt to vary considerably in its intensity at different times: it is greatly increased in distinctness during periods of increased energy in the heart's action. Indistinct at first, purring tremor increases for a time with the progress of the disease on which it depends; by and by, however, it declines in intensity; and towards the close of the malady, and as the heart loses power, it may cease to be perceptible at all.

Of friction murmurs.—These murmurs, as pathognomonic of inflammation of the pericardium, are most advantageously studied in connection with this morbid state. It will be enough if, in this place, the most general and distinctive characters of murmurs of this class be indicated.

Friction murmurs, then, are very generally double, *i. e.* they are at once systolic and diastolic, the former of these being always the louder, and frequently remaining perceptible when the latter is no longer appreciable. Friction murmurs are constantly heard as very close to the ear; the first and second sounds are perceived through them at a relatively much greater distance. They never extend beyond the periods of the systole and diastole, with which they are inseparably connected. They are not very constant in their character. They vary somewhat either in the precise point where they are heard most distinctly, or in their intensity, in the course of a few minutes. Systolic friction murmurs are generally most distinct along the left margin of the precordial region, and towards the lower half, or apex of the heart. Diastolic friction murmurs, again, are usually most obvious about the middle of the precordial region, along the line of articulations between the ribs and their cartilages; they are probably auscultated

to the greatest advantage, in the majority of cases, over the nipple. They never extend beyond the boundaries of the precordial region, and they cannot be traced along the course of the great arteries, the aorta, carotids, subclavians, &c.

Friction murmurs have very different degrees of intensity in different cases: here they have something of the character of the soft blowing murmur, and are imitated indifferently by the crumpling of fine cambric paper, or by passing the fingers along a piece of sarcenet; there they rather resemble the rasping intrinsic murmur, approaching in harshness to the sharp creaking of a strong sole under the foot; and again, they bear a distant affinity to the creaking of the saddle under the horseman, which was Laennec's comparison, for he had perceived the friction murmur, and, in the first instance, had even divined its pathological signification; although, for reasons which he does not specify, he was led to abandon his first correct impression in regard to its import. Friction murmurs, as already stated incidentally, are occasionally accompanied by thrills.

It is by no means always easy at once to distinguish an extrinsic from an intrinsic, a friction from a blowing murmur of the heart. A little attention, and the time necessary for reflection, however, generally enable us to distinguish accurately between the two. Blowing murmurs, for example, are heard at a certain distance, friction murmurs immediately under the ear; blowing sounds very generally extend along the course of the great vessels, friction murmurs remain limited to the precordial region; intrinsic murmurs are often heard loudest towards the base of the heart; extrinsic murmurs are most distinct about the middle of the precordial quarter, and from that down towards the apex. Intrinsic murmurs are much more frequently single than double; extrinsic murmurs are almost always double. Intrinsic murmurs scarcely vary in point of intensity from day to day—they are precisely what they were before when they are examined again; extrinsic murmurs, on the contrary, not only vary in character, seat, and intensity, from day to day, but from hour to hour, and almost even from minute to minute.

Of the Natural and Preternatural Shock and Sound of the Arteries.

Every one is familiar with the rising of an artery under the finger, which is called its pulse. Synchronous in the larger arterial trunks with the impulse and first sound of the heart, the pulse of the smaller and more distant arteries lags behind the beat of the heart in proportion to their remoteness from the central organ of the circulation. The extent of the shock in the arteries is well known to differ greatly at different times; this, as a general law, is connected with the state of activity of the heart: as the pulse is rapid or slow in connection with the rapidity or slowness of the action of the heart, so is the pulse full or small in connection with the magnitude of the wave of blood which the heart expels at each contraction. The pulse is necessarily of the same frequency in all the arteries of the body at the same moment. It is not, however, as a matter of course, of the same volume or power in all. The pulse of the artery leading to an inflamed extremity has long been known to be fuller than that of the opposite healthy limb. This is in consequence of the augmentation of calibre which takes place in the vessels of parts that are in a state of inflammation. Of more ample capacity, the wave of blood which is transmitted is also larger, and its impulse is less reduced by friction in its onward course; hence the force with which the artery leading to a part in a state of active inflammation strikes the finger. It is not necessary, however, that there should be actual inflammation in order to have arteries, upon occasion, beating with unusual violence: the throbbing of the carotids and of the abdominal aorta, in connection with headache and simple functional derangement of the abdominal viscera, satisfies us of this. In these circumstances, the action of the heart is not always, nor indeed generally, increased in energy. The arteries possess an inherent vital contractility, by which they acquire the power of regulating, to a certain limited extent, the current which is passing through them.

Is the pulse of the arteries accompanied by any sound apart from that which their included column of blood transmits from the heart? When a considerable artery, such as the brachial or the femoral, is auscultated, a distinct

whiff is generally very perceptible at the moment of the pulse, *i. e.* of the diastole of the vessel. The artery is at this moment yielding to the stroke of the heart, and the sound which accompanies an yielding movement cannot surely be ascribed with propriety to any inherent power in the part which yields. Any sound that could be ascribed to the arteries ought to occur as they are contracting on their contents, and urging them onwards; but all is silent at this moment. The whiff of the larger arteries, then, is a simple friction murmur set up in the column of blood that is threading them, and appears to be due in great part to the transmission of the first sound of the heart along that column. We are constantly in the habit of interrogating the great arteries about the root of the neck for the value and significance of the signs which we perceive in auscultating the precordial region.

Blowing and rasping murmurs, and purring tremors, are every day found transmitted to great distances along the arteries; even in feeling the pulse at the wrist, we can sometimes diagnose a contraction of the aortic orifice of the heart, or otherwise; and under the guidance of general symptoms, decide on a state of anæmia. I have already said that the sounds which all the distinguished auscultators of France speak of under the titles of *bruit de souffle continu*, *bruits musicaux des artères*, *bruit de diable*, *chant des artères*, &c. are referred by them to the arteries, whilst in England they are generally acknowledged to be connected with the veins*. I shall not enter again upon this subject in this place, but reserve what I have to say till I come to speak of anæmia. There is one important point, however, which seems worthy of a brief consideration in connection with the general pathology of the heart and circulating system; this is—

Of the Distension and Pulsation of the Jugular Veins†.

A certain degree of fulness of the jugular veins is extremely common as

an indication of disease of the heart; distinct pulsation in these vessels is more rare, although it is also frequently enough observed. Any unusual fulness of the great veins about the root of the neck certainly depends upon the existence of obstacles to the transmission of the charge of blood which they convey. Trifling at first, and only perceptible in the vessels immediately over the clavicles, the distension often goes on increasing by degrees; the thyroid veins, the veins about the upper part of the thorax, those of the face, and even of the extremities, are then attained in succession.

Distension of the jugular presents itself under two forms: distension by congestion, and distension by reflux or regurgitation. In distension by congestion there is simply enlargement and fulness of the vessels, without any pulsation in them. It is at once distinguished by placing the point of the finger over the vessel in the middle of the neck, when it becomes empty and disappears below. Distension by regurgitation is indicated by unusual fulness of the jugular veins, which are at the same time the seat of pulsations. The pulse thus communicated from the heart to the jugular veins is never of force sufficient to be felt by the finger applied to the vessel; but it is abundantly apparent to the eye. It sometimes extends to the thyroid veins. The vessels being compressed immediately above the sternum, the pulsation in them ceases. If the whole of one of the veins be gently compressed by the fingers laid flat upon it, and the pressure be suddenly removed from below, whilst it is still maintained above, and at the point most remote from the heart, the wave of blood may be seen mounting in the vein, the pulse being for the most part synchronous with that of the ventricular systole.

In some cases, however, the pulsations observable in the dilated jugular veins are evidently twofold, or double in reference to each beat of the heart. By a little careful manipulation in emptying the vein, and cutting off the current that feeds it from above, we sometimes see that the ventricular systole is preceded by an indistinct pulsation in the vein, immediately upon which succeeds a much more marked pulsation. The first indefinite pulsation is unquestionably due to the action

* In my last paper, I stated inadvertently that the French writers did not anywhere refer to the veins as the possible source of these murmurs. I see now that Barth and Roger state, that the reasons which Dr. Hope assigns for ascribing them to the veins do not, in their judgment, appear sufficient. (*Traité*, &c. p. 395.)

† There is an excellent article on this point in the *Leçons* of M. Gendrin, to which I beg to refer.

of the right auricle; the second is as certainly connected with the contraction of the right ventricle. In such circumstances we can diagnose with the greatest certainty contraction, generally to a considerable extent, of the right auriculo-ventricular orifice, and at the same time imperfection of the tricuspid valve. Imperfection of the tricuspid valve is by far the most common and single cause of regurgitation into the jugular veins.

Congestive distension of the jugulars is not necessarily connected with disease of the heart only. It is often seen in such acute diseases as pleurisy of both sides, and pneumonia involving a large portion of one or of both lungs. It also occurs in connection with extensive tubercular deposition into the upper portions of the lungs.

This congestion does not coincide with diseases of the right side of the heart alone; it is constant in many of those which affect the left side also. Wherever there is contraction of the left auriculo-ventricular orifice, and, in consequence of disease of the heart, œdema of the lungs, and effusion into the pleuræ, there it is regularly observed, obviously in connection with the difficulties which the right cavities now experience in forcing their contents through the lungs, replete with blood which they cannot transmit, or encroached upon by serous fluid effused into their intimate structure or containing sacs.

With the progress of disease of the left side of the heart, too,—contraction of the mitral orifice, and hypertrophy of the left ventricle,—the tricuspid valve becomes unapt to close the right auriculo-ventricular orifice completely, whence regurgitation upon the auricle, and from that into the jugular veins.

[To be continued.]

OBSERVATIONS ON CHOLERA.

To the Editor of the Medical Gazette.

SIR,

THE MS. which accompanies this note is an extract from a letter which I received a few days ago, from my son, Mr. J. A. Bostock, Assistant-Surgeon to the 3d Regiment, who is now in India, and had the charge of a body of troops which were proceeding from

Calcutta up the Ganges. During their passage an epidemic cholera broke out among the men, of which my son gives me an account, and which, although hastily written, and certainly not intended for publication, contains so lively a picture of what passed under his own inspection, that I conceived it might be interesting to your readers, and have accordingly transmitted to you, in the exact words of the letter. It is dated December 13th, and was written during the passage up the Ganges, shortly before their arrival at Allahabad.

I am, sir,

Your obedient servant,
J. BOSTOCK.

Upper Bedford Place,
Feb. 15, 1843.

I intended to have given you some farther account of the cholera, and the treatment that we found most successful, but I find myself so near the conclusion of the sheet, that I must limit my remarks to a very few words. We were very much struck with the suddenness of the attack, which did not appear to be preceded by any general feeling of indisposition, such as is mentioned by Mr. Annesley, and for which he recommends free venesection. The most violent symptoms, with us, seized the unfortunate patients in the first instance. In some cases they had a little diarrhœa for two or three days previously, but as this is very common in the detachments, and was by no means invariably the case, I believe that it was accidental, and not a constant or premonitory symptom. It is worthy of remark, also, that some of the very worst cases occurred in strong and healthy individuals, and that the disease did not show any preference for those previously in ill health, weakened by disease, or for the intemperate or drunken. As a proof of this, I need only mention, that the two first cases, which proved rapidly fatal, occurred in non-commissioned officers, fine, strong, active young men, promoted to the rank of sergeant for their sobriety and general good conduct. These men have capital pay, little less than a cornet's, and in this country, where fowls, eggs, and milk abound, must live well. Extraordinary as it may appear, some unfortunate patients dying of diarrhœa and dysentery, escaped altogether, and have lived through it, when others in robust health have sunk in a few

hours. In farther illustration of this point, it is singular, that in one troop (I have not inquired in others) all the men who died were of good character, and do not appear in the "defaulter's book," that is, the punishment book; and also, that only four of the army of native sailors and camp followers have had the disease. Of the predisposing causes I can therefore say nothing, nor can I give you any account of the exciting. I think that the majority of the cases occurred before day-break, at the coldest part of the day. The disease when it did occur was most frightful. In the extreme violence of the symptoms and the awful rapidity with which it proceeds to a fatal termination, it surpassed anything I ever saw in Europe. In several cases the sufferers died long before medical aid could be obtained, on the arrival at the halting place for the night (their cases and death were reported together); in many others I was summoned to witness their last struggles; and in nearly all, death took place in five, six, or seven hours, during the first week or ten days of the epidemic. The cases subsequently became milder, and, if seen in time, a large proportion were saved. The prevailing symptoms were vomiting and purging. In a few minutes all the fecal and bilious matter was discharged from the bowels, and, after that, the fluid discharged from the bowels and stomach resembled dirty water. The skin over the whole body sympathized in a remarkable degree with the mucous membrane, and was covered with perspiration. The eyes sunk, and the hollows were filled with pools of cold sweat. Shortly after the purging began, the most violent cramps seized the extremities, and continued until the patient was completely exhausted, and in fact nearly dead. The tongue and breath became cold, and the body had the feel and appearance of a subject on the dissecting-table.

In the treatment, the great object was to stop the vomiting; and the remedy which appeared to answer this best was calomel and opium, in the proportion of one scruple to two grains. This large quantity was given every hour till the vomiting ceased, and, at the same time, a table-spoonful of equal parts of hot water and brandy was administered every half-hour. Notwithstanding the great quantity of

calomel given (almost in poisonous doses), no ill effect took place from its exhibition, although in some cases, when recovery took place, as much as 300 grains were swallowed. The gums of a few only were made sore; and in one case only has any injury been done to the teeth and alveolar process. This was a very bad case, and life was with great difficulty saved at the expense of the inferior incisors.

The calomel given in combination with opium appeared to act as a sedative; it certainly allayed the constant vomiting and purging, and was found much more beneficial than opium, or any other medicine. In many cases an obstinate diarrhœa remained after the urgent symptoms were relieved, which subsided gradually under the use of opium, gr. j. given every hour for many days; repeated blisters to the abdomen, and great attention to diet.

In no case that I saw was bleeding admissible; however good this remedy may be for some forms of this complaint, it was certainly not applicable to the violent epidemic that we experienced. During the prevalence of the cholera in the fleet, the average amount of sick was immediately doubled, and numerous cases occurred and died in the troop-boats, so that the sick treated in the hospital and troop-boats became nearly equal, occasioning the greatest trouble and difficulty to the medical officers, whose whole time was spent in going about in the burning sun from boat to boat, with a supply of pills in their pockets, and a bottle of brandy under each arm. The greatest panic prevailed; every slight complaint was set down as cholera, and the brandy bottle, considered a panacea for all ills, had resort to, to such an extent, that in several boats the horrible spectacle was presented of one man dying in one corner, one or two dying in another, and the rest half dead with drunkenness or fright. It was useless to prohibit or to punish offenders: "The doctor," they said, "prescribed brandy, and spirits they would have;" and as they were not allowed to buy good brandy or rum from the canteen, they robbed the native villages, and drank all the raw spirits they could steal.

CASE OF RICKETS.

To the Editor of the Medical Gazette.

SIR,

HAVING been much pleased with the result of the treatment (advised by Dr. Evanson) in the following case of rickets; and thinking it worthy of being very generally followed, may I request you to give it a place in your valuable periodical.—I am, sir,

Your obedient servant,

JAMES KIRK, M.C.

405, Gallowgate, Glasgow,
Feb. 20, 1843.

In the month of May last was consulted on the case of D. R., a boy aged about $3\frac{1}{2}$ years, with the following symptoms. "His skin is very dark and sallow; his head large, heavy, and firmly ossified; his teeth late in appearing. The clavicles project upwards into the neck in the form of an arch, while the sternum is protruded in front of the chest like the keel of a boat, and there is a large and deep hollow caused by the flattening of the ribs under each arm-pit. The belly is large and hard, and the thighs and legs much wasted and emaciated; he is unable to walk, and the wrist-joints, in particular, seem much enlarged."

In addition to these appearances I found that he complained of a short dry cough, though nothing abnormal could be discovered on using the stethoscope, except that the breathing was more hurried than natural; that his bowels were rather loose, and his urine high-coloured; that he was very thirsty, and averse to make any exertion; that he was in the habit of picking his nose, and that he had regularly every evening a febrile exacerbation so marked, that but for the appearance of his body I would have supposed him to be labouring under infantile remittent. As I happened at this time to be reading Maunsell and Evanson's work on the Diseases of Children, it was consulted on the subject of this child's complaint, and I resolved to give their plan of treatment a fair trial.

Having first, then, cleared out the bowels by four small doses of calomel and rhubarb, we began the administration of their remedy, which consists of three drops of the hydriodated solution of iodine, and the same quantity of the

tincture of the muriate of iron, given three times daily in sweetened water: the number of the drops of each to be gradually increased to ten. He was also ordered to have a warm salt water bath every evening, with friction over the spine and belly; his mother was likewise instructed to place his back against some unyielding surface, and to press back the sternum with the palm of the hand (as practised by Dupuytren), taking care not to give pain.

Shortly after taking the medicine his appetite became considerably improved; but, unfortunately, his mother having neglected to dry him after coming out of the bath, he caught cold, and his cough became much aggravated. In these circumstances he was ordered a mixture for his cough, and a small blister over the middle of the sternum, his former medicine being continued; but neither the blister nor the expectorant, which was repeated, seemed to do his cough any good. After the blister had healed up, the sternum was pressed back as formerly, and the cough began gradually to disappear as the chest approached more nearly to its natural conformation. Four months after the time when this boy was first brought to me, during the whole of which period the above practice was most sedulously persevered in, except the bathing and pressing back of the sternum, which were discontinued two weeks ago, I found him to have made a very marked and astonishing degree of improvement. His skin was much clearer, his chest was flatter, the hollows under his arm-pits were neither so large nor so deep, his belly was smaller and softer; his arms, which were the first to improve, are now quite plump, and the swelling of the wrist-joints much diminished; his legs and thighs were also much improved, and he could walk by the hand. He had no cough, thirst, or fever; his appetite was good, his bowels regular, and he was not so fond of salt.

An equally pleasing change had taken place in this child's disposition. Formerly he was peevish, timorous, and unwilling to make any exertion; now he is cheerful, active, and bold. He was at this time taking eight drops of iodine, and eight of steel, three times daily.

Two months after I again saw this child, and found him still farther im-

proved. The hollow under the arm-pit has disappeared entirely on one side, and is much diminished on the other. The chest is now nearly of the natural appearance; he has also become quite fat, and can walk alone. He had (at this time) taken no medicine for almost two months.

MEDICAL GAZETTE.

Friday, March 10, 1843.

“Licet omnibus, licet etiam mihi, dignitatem Artis Medice tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso.”

CICERO.

THE SYDENHAM SOCIETY.

THE circular of the Sydenham Society is by this time in the hands of most of our readers, and it seems probable that a very large number of subscribers will shortly be enrolled. It is repeatedly, but we believe erroneously, urged as an obstacle to the success of this plan, that the greater number of working practitioners have either not leisure to read, or not taste to enjoy, most of the works which the projectors suggest for re-publication. The plan itself is eminently calculated to remove many existing impediments to the improvement of taste, and the consequent extension of such reading as it proposes to furnish. Among these impediments is the inertia which is a natural property of professional solidity, and which while it increases the momentum and thereby the activity of the practitioner during his daily circuit, indisposes to fresh exertion after his return to a state of rest. This force is directly opposed to the trouble of sending hither and thither for a book which is scarce. If the book be also solid, and condensed in its quality, the necessity for reading and returning it within a given time is irksome in all cases, and in many is a positive and insuperable

objection. Small district book clubs, now very numerous in the metropolis, and elsewhere, are exceedingly useful for circulating the lighter medical reading of the day; but for more solid works—for those which require opportunity for reading again and again—for that mental rumination which such works demand, and which is in fact necessary to their effectual digestion, there is no time during the hasty roadside meal which these book conveyances provide. When such *pièces de resistance* are thus hastily set before us, if a healthy appetite provoke us to attack them, crudity and indigestion are apt to follow, rather than vigour and refreshment.

But when for a fixed sum, and that not very large, the possession within each year of one or two volumes really and notoriously good and worth reading, can be secured, then all the inertia which keeps a man at home, acts in favour of his reading these books when so placed within his reach. That such arguments should have any weight in speculating on the success or failure of a literary enterprise, may excite the indignation of those most estimable men who have toiled painfully over old volumes, overcoming great difficulties in obtaining, and greater in understanding them, but who have prized and benefited by the treasures they obtained, in proportion to the pain bestowed upon their acquisition. “Cave hominem unius libri,” says the adage; and there is no doubt that men who read in this way, do entitle themselves to a literary dignity, which must not be dreamt of by the annual reader of a guinea's worth of reprints. But, whether to be deplored or not, it is a matter of fact, that, in our days, what is not made as easy as possible will not be attended to at all; and those high matters which were of old

diligently sought, and hardly obtained, and highly prized, by the few, must be put within the reach, and arrest the attention, of the many. Let us get what good we can from the fact, and examine the probable results of this plan on medical society as it is. Polite letters, like polite manners, and indeed like all the nobler and more graceful qualities of mind or body, do more service when extensively diffused than when highly concentrated. The King of France called Lord Stair the politest man he had ever met with, because he at once obeyed the royal command to enter a carriage first: but the intelligent courtier pleased by contrast; and his Majesty's remark was but a comment on the inconvenient style of politeness then generally current, and which the *Spectator* complains of in "Honest Will Wimble."

"Last night, as we were walking in the fields, he stopped short at a stile until I came up to it; and upon my making signs to him to get over, told me, with a serious smile, that sure I believed they had no manners in the country."

The useful arts in the same way benefit mankind by their diffusion. It is better that there should be one hundred good watchmakers in a country, than one man who could invent, and even bring to perfection, the clock of Fontainebleau. In science, although peculiar talents in an individual, and exceeding concentration of those talents on a particular subject, seem to work out more commonly the great problems which are solved from time to time; still the good is not fairly gained till the knowledge is diffused.

There is a time for every thing, says the wise man; and the observer will never weary of tracing seasonable fitness in the different objects pre-

sented to him, whether physical merely, or social and moral.

The great subjects for the contemplation and the aim of man — art, science, learning, and wisdom — follow each other in regular order, and have their several seasons of predominance and vigour, both in individuals and in societies, although the germ of the very last developed exists from the first, and the first continues in action to the last. Art works from the beginning, and is the business of infancy and youth. The youth has learnt the art of walking, speaking, reading, and it may be, a trade. He works by experience of what he sees and does, and by rules which he understands not. Science is the occupation of early manhood, and maturity: it discovers the causes of known effects, and the reasons for rules, and it predicates effects from known causes.

Learning is also the work of the same period: it searches, combines, separates, compares; and thus, with science, lays the foundation for wisdom, which judges — the peculiar duty of age.

Much the same is it in societies. Art has begun as soon as men have done the same thing twice, and has made some advance when one man does anything better than his neighbour: it works only by skill and experience, beyond which it sees not, and its belief in these is implicit and undisturbed; it makes to itself rules, which are right; wishes for and invents reasons, which may be wrong.

Science seeks for these reasons, and dictates new rules; and if it makes out a case, and shows that it can improve art, its offers are accepted; it, therefore, has a powerful influence on art. Learning can be fully developed only in the maturity of society, and the greatest differences exist according as either science or learning is exclusively

cultivated. Perhaps we are now arrived, in medicine, at a stage which calls for a wholesome exercise of learning. Art has done much, science is doing much, while learning, from having indulged a tendency to be pedantic, has fallen into comparative disrepute. This tendency of learning to be pedantic, exclusive, and dogmatical, seems to be inherent, and to shew itself from time to time, when science has been comparatively neglected; and the natural corrective seems to be the restoration of science to its due position. The tendency of science, on the other hand, when too exclusively cultivated, is rather to arrogance and conceit. It often flatters the multitude by flinging among them a truth, or a fiction that looks like a truth, and letting them scramble for the profits. The useful arts are favoured by science, from which they take much direction and improvement. The ornamental arts are more fostered by learning; and the bigoted craftsmen of both classes are prone to tumults which their interested leaders find more easy to excite than to allay.

The direct manner in which science ministers to the material wants of mankind, renders it more imperious and obtrusive than is always well for its professors. It threatens, as it stalks through the land displaying brilliant discoveries, and promising important results, to trample down those who do not get out of its way, and to leave those sadly behind who neglect to benefit by its progress. The enormous changes which a single discovery in science can make in the distribution of capital alarm the timid and excite the sanguine; there is, therefore, more bustle, more *éclat* attending its progress than that of learning, which may be greatly neglected without corresponding inconvenience.

When, indeed, learning occupies its proper place, it is remarkably unobtrusive, and though it confers great rewards on those faithful votaries who seek it for its own sake, it does not often court the multitude by large promises. This it only does when it has been raised to an undue position; and when, after being entrusted with the keys of wealth, knowledge, and power, it has become fraudulently rich, and extravagantly puffed up. Then, indeed, knavish adventurers seek it for what they can get by it, and honest men despise advantages which must be enjoyed in such company.

When we spoke of the various phases of social progress, learning was considered in its most extended sense, including the knowledge of all that had gone before, and was matter of record; but what bears more on our present subject is the literature of our profession, that which, from its acknowledged merit of matter or style, has become classical; a taste for this should be inculcated early, in the second or first year of the professional curriculum, when the transition is easy from general to purely medical classics. The vivid descriptions of disease given by the Greek physicians cannot indeed then be fully appreciated, nor should more be attempted in this way than to enlarge the *copia verborum*, and keep up the habit of composition. This will give the requisite facility for a due appreciation of ancient accuracy at a future time, when the taste and judgment shall be matured by experience.

It is to be hoped that the Sydenham Society will go far to improve the taste of the profession, and that, some day, those who have any real thing to communicate, may be able to tell it in good readable English, a quality not so universal as is generally supposed. It has been elegantly said, by Dr. Blair, that only the most solid bodies bear the

highest polish. The mere being able to write is not a sufficient excuse for publishing without something to say, still less for saying what should have been left unsaid; professional advertisements are as bad in Svo. as in the columns of the *Times*; and in the age of universal scribbling which has begun, they will soon be so considered. The clever article on advertisements in the last Edinburgh Review has let off the doctors so leniently, that it is to be feared some of their books are reserved for a separate occasion; and we blush, by anticipation, for the chastisement which some of the offenders deserve.

ROYAL MEDICAL & CHIRURGICAL SOCIETY.

February 28, 1843.

THE PRESIDENT IN THE CHAIR.

On Fatty Degeneration of the Arteries, with a Note on some other Fatty Degenerations. By GEORGE GULLIVER, F.R.S.
[Communicated by Dr. HODGKIN.]

THE author, remarking how vaguely the epithets, atheromatous, steatomatous, &c. have been applied by pathological writers to diseased arteries, and that the morbid deposit between the middle and inner coats, and in the substance of the former, has not, as far as he knows, yet been submitted to precise examination, gives the result of his own observations, from which it appears that the disease is really of a fatty nature. A microscopic examination of it brings into view a multitude of crystalline plates, fatty globules, with albuminous and earthy particles. Several specimens of the crystals were sent for examination to Dr. Davy, who ascertained that they are of cholesterine.

The fatty matter is easily extracted by boiling alcohol, and the crystals of cholesterine are seen to be deposited as the solution cools. The author has examined numerous specimens of the disease, and never failed to observe these crystals and the fatty globules in the deposit, and also generally in the substance of the altered middle coat. The microscopical characters are given in two figures.

The accuracy of Dr. Davy's observations (see his *Researches*, Phys. and Anat. vol. i. p. 372 and 436) as to the thinning, &c. of

the middle coat of the artery, is confirmed by Mr. Gulliver.

The importance of fatty degeneration of the coats of the arteries is insisted on, especially as to its general connection with thickening and puckering of the inner membrane, with aneurism, with obstruction, occlusion, or ossification of the vessels, and of those ruptures of them which are so frequently the cause of sudden death.

The author adds, that fatty degenerations are more common, and of more importance, than has yet been supposed. He mentions obstruction, by fatty particles, of the seminal tubes; and notices fatty degeneration of the blood, lungs, &c. The disease he describes as being more remarkable in "brown consolidation" of the lungs than in red consolidation; and these two diseases are described as affording distinct morbid products.

A Normal and Abnormal Conscious State, alternating in the same individual. By JOHN WILSON, M.D. Physician to the Middlesex Hospital.

This case occurred in a boy, aged 14, a patient in the Middlesex Hospital, who is said to have complained of headache for two or three days, but whose appearance was healthy. For three or four days his appetite was inordinate, seizing upon any article of food he could meet with in the ward, though allowed full diet. When not eating or seeking for food he generally slept night and day. This abnormal state continued for three or four days, when he recovered his natural state of sleep, appetite, and consciousness. Then he had no recollection of what he had done, or of what had happened to him since his admission.

He was shortly discharged, but twice readmitted, each time presenting the same symptoms; *i. e.* alternations of consciousness and unconsciousness.

No treatment was adopted. The author, for the present, reserves his opinion and inferences drawn from this case; his object is to invite further examination for similar cases; and when such occur then will be the time for discussion.

Remarks on the Calculi in St. George's Hospital. By DR. BENICE JONES.—
[Communicated by Mr. C. HAWKINS.]

The number of specimens submitted to examination was 233. The author's object, from the analysis of these calculi, is to arrive at conclusions with regard to the comparative frequency of different states of the urine in calculous complaints, and thus to obtain practical hints as to the efficacy of remedies intended to alter the secretion, or act upon the stone in the bladder. He presents several tables: and taking 450 states of the urine, inferred from the com-

position of the calculi, finds that, in 139, it was alkaline, and in 311 acid, to test paper. Omitting from the latter list 59 specimens of oxalate of lime, 252 cases of the uric acid diathesis remain: and in 117 of these, no free acid was passed, from which the author concludes that alkalies would have been of no benefit to them, so far as neutralizing acidity of the urine was concerned. Taking the cases in which the alkaline concretions prevailed, he infers that in 52 the calculus might have been lessened by the injection of dilute acids, and in 12, the whole calculus might have been removed; while in others to which he refers, disintegration might have been effected. He concludes by describing a calculus in Mr. Cæsar Hawkins' possession, the nucleus of which consists of cystine, and which, from the history, appears to have been formed when the patient was $2\frac{1}{2}$ years of age.

Case of Ulceration of the Internal Jugular Vein, communicating with an Abscess.
By W. BLOXAM, Surgeon to Queen Adelaide's Lying-in-Hospital, and Lecturer on Midwifery.—[Communicated by SAMUEL LANE, Esq.]

The patient, five years of age, after scarlet fever, had suppuration of the glands of the neck of the right side, near the angle of the jaw. Five days after the abscess burst, blood of a venous character was discharged from the opening, at first in small quantity, and afterwards more copiously. Graduated compresses were applied; but the hæmorrhage could not be restrained, and the child died on the fifth day from the commencement of the bleeding. On dissection, an ulceration of an oblong shape, about five lines in its long axis, was found in the inner side of the internal jugular vein, and opening immediately into the sac of the abscess. Extravasated blood was also observed beneath the integuments of the throat and fore-part of the chest.

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FELLOWES' CLINICAL PRIZE
REPORTS.

By ALFRED J. TAPSON.

University College Hospital, 1842.

(Continued from page 798.)

Hæmatemesis to the amount of two quarts, preceded by various symptoms of dyspepsia, &c.

CASE VII.—Mary Mullins, æt. 23, admitted May 24, 1842, under Dr. A. T. Thomson. Conformation moderately stout; temperament sanguine; complexion florid; a native of Limerick, but has been living in London for several years as housemaid. Habits have been regular, never intemperate; has always had plenty to eat. Mother died of consumption; five of her brothers and sisters died young; two now living and healthy. She is naturally very strong and hearty, and her spirits are always good; she has never had any serious illness.

During the last two or three years she has been subject to pain after eating, and other symptoms of indigestion, which have been gradually getting worse. All through the last winter she has had pain in the chest, and feeling of a load on the stomach after taking food, especially after dinner; and this would generally continue until she vomited the food up again, and then pass off, and not return until she again took food. The food was often vomited quite undigested; if she did not vomit the pain would subside usually in an hour or two. The pain was much more severe when she ate salt beef, &c. than when she took light food; this last, indeed, did not always cause pain. Not unfrequently she has felt a load on the stomach before she has got up in the morning, and vomited a considerable quantity of phlegm tinged yellow with bile. In other respects she has been very well, has had no cough or dyspnoea, no headache or palpitation; the catamenia have been regular, and were present about three weeks since.

About a month since she went to bed one night feeling quite well, but was awake in the morning with a very severe pain at the pit of the stomach, and was soon sick; this relieved her. But after eating her breakfast it again returned, and was again relieved for a short time by vomiting; but the pain soon recommenced, and then her mas-

ter, who was a surgeon, sent her to bed, ordered hot fomentations, and gave her some medicine; and two days after, as the pain got rather worse, and was increased by eating any thing, or by drinking either hot or cold fluids, he ordered twenty leeches to the abdomen, and gave her some more medicine. The pain was soon relieved, and it has not since returned to any great degree, though she has frequently had some pain. She soon returned to her usual work, which, she states, was very hard, and she had to work harder at this time than usual, in consequence of illness in the house.

The *present attack* came on two days since (May 22d). She had been very well all the day, but towards evening her face was much flushed, and the body generally, especially the palms of the hands, felt very hot, and she felt rather faint and sick all the evening, but had no pain or load in the stomach. Soon after eating some bread and cheese for supper, and drinking some water, she was suddenly attacked with sickness and vomiting. She did not see what she brought up at first, so that she cannot say whether it was her supper or what it was; but almost directly after she vomited as much as a quart of apparently pure unmixed fluid blood, of a florid colour. Her master was immediately called; but before he had time to give her any thing, she vomited about another quart of blood; this was much darker, and partly clotted. The attack was not preceded or accompanied by coughing; the blood was not at all frothy, and was brought up with regular vomiting. She went to bed, and had some very acid medicine to take every four hours. During the night she felt very faint, and could not sleep, but had no return of the vomiting, nor any pain. The following morning (yesterday) she drank a glass of cold water; this was immediately returned by vomiting, and with it a small quantity of quite black clotted blood. After this she had some pain and throbbing in the head, and felt faint and sick, but did not vomit again till this morning (May 24th), when she vomited a little gruel that she had taken, and this was slightly tinged with blood. The bowels were opened this morning, and the evacuation was quite black.

On her admission the face and lips were pale, the skin hot and uncomfortable all over the body, except the feet, which were cold. She felt very weak and faint, and rather sick. The pulse was 108, small and compressible; she was thirsty; had no appetite for food. There was tenderness on pressure in the epigastric region, and extending along the margins of the ribs on the left side. The tongue was white, and slightly furred; the urine natural.

R Acidi Gallici, gr. vj.; Aquæ, f3vj. ft. mistura. Sumatur coch. mag. unum tertiâ quâque horâ. Low diet.

May 25th.—Much better; still rather faint and sick; tenderness on pressure much the same. The heart's impulse and sounds natural; no morbid sound heard with the respiration; breath-sound clear; pulse 90, small, and rather weak; bowels not open.

Sumatur mistura 6tâ quâque horâ.

R Ol. Ricini, f3ss.; Aquæ Menthæ Viridæ, f3j. ft. haust. quamprimum sumendus, et repetatur p. r. n.

26th.—Improving; less faintness, and does not feel quite so weak; bowels open.

Sumatur mistura 8vâ quâque horâ.

Repetatur Ol. Ricini. Milk diet.

27th.—Got up a little yesterday afternoon; felt very giddy and faint. This morning she does not feel quite so well; has a little headache; there is no pain in the epigastrium, but the tenderness remains just the same in the left hypochondriac region; it is limited to a very small space. The milk made her feel very uncomfortable, but did not cause vomiting. Pulse 86, pretty full, but easily compressed.

Omittatur mistura.

28th.—Still feels giddy when she moves about; the tenderness is much the same; tongue pale and flabby; appetite returning.

30th.—Did not feel so well again yesterday; after eating some broth she had pain and soreness across the stomach, but to-day she feels comfortable, less giddy, and stronger; has a sensation of ticking in her head when she stoops, and also palpitation of the heart.

Discharged cured.

REMARKS.—*Diagnosis.* This patient was admitted into the hospital after the principal symptom of her malady, viz. the vomiting of blood, had ceased; and we had only her account to trust to in the formation of a diagnosis as to the source whence the blood had proceeded. Under these circumstances there is often considerable difficulty in ascertaining whether the case be one of hæmatemesis or hæmoptysis: in the present instance, however, it was clearly hæmatemesis. It was distinguished from hæmoptysis by both positive and negative symptoms and signs.

1st, *As to those which mark it as a case of hæmatemesis.*—It was preceded by a sense of sickness and faintness, as is usually the case in hæmatemesis. The blood came up with regular vomiting, in gushes; there was no food seen to be mixed with the blood, but this probably arose from her having vomited immediately before; and it is most likely that the supper which she had

just eaten was vomited at this time; there is, however, no evidence of this, as she did not see what she then vomited. On the following morning she vomited some water which she drank, and with it came a small quantity of black clotted blood, shewing that there was blood in the stomach; and the colour of the blood proved that it had been there some little time, having been rendered black by the action of the gastric juice, and by the carbonic acid, &c. in the stomach. The second day she again vomited after eating some gruel, and this also was tinged with blood; and when the bowels were opened, the evacuation was quite black; and, lastly, there was great reason to believe that it proceeded from the stomach, from the long-continued derangement which had existed in this organ, as manifested by the dyspepsia and bilious vomitings, and the attack which she had about a month previously, either of great congestion of the stomach, or subacute gastritis.

2d, *As to the signs which show that it was not a case of hæmoptysis.*—It was not preceded or accompanied by coughing; the blood was not at all frothy; the quantity of blood was greater than is usual in hæmoptysis; and there were no symptoms referrible to the chest, no pain, no cough, no dyspnoea, and no physical signs of disease in the chest.

There can be no doubt, therefore, that it was a case of vomiting of blood, or hæmatemesis.

In alluding to the next point, viz. the cause of the vomiting of blood, we have much more difficulty to encounter; perhaps we shall be able to arrive nearest to the truth by first briefly enumerating the various possible causes, and then excluding those which manifestly had nothing to do with it here.

Hæmatemesis may be produced by organic disease of the heart, liver, spleen, &c.; by organic disease of the stomach, either passive, such as may be caused by an obstruction to the circulation, or active, as in the early stages of inflammation of the stomach; also, by a morbid state of the blood, such as exists in scurvy; by some corrosive poisons, as oxalic acid; by blows or strains, as in the effort of vomiting; and by suppression of the catamenia, or of some other habitual discharge. Of these various causes we may exclude organic disease of the heart, liver, and spleen, as there was no evidence of any such; also the determination of blood attending the early stage of gastritis, as gastritis did not exist; also, morbid state of the blood, as there were no marks of this; also, poisons, as she had not taken any; also, blows; also, suppression of the catamenia, as she had menstruated regularly three weeks before her admission, and less than that therefore before the attack.

Thus, we have reduced the causes to organic disease of the stomach and simple sanguineous congestion, and to these we might add as predisposing causes her sex and temperament.

If organic disease of the stomach was the cause it was probably chronic ulceration, as there were no evidences of cancer, which is the other principal organic disease of the stomach. There are several circumstances which favour the idea that there was chronic ulceration, and that this produced the hæmorrhage by perforating some vessel: thus, the severe dyspeptic symptoms which had been gradually increasing for two or three years; the pain, latterly pretty constant, and increased by either hot or cold fluids; also, the fluid state and florid colour of the blood first vomited, increase the probability of there being some cause to produce rupture of the vessels, for it is difficult to conceive how so large a quantity of florid blood could come from the stomach unless there had been some vessel ruptured; for had it transuded through the coats it would most likely have been rendered dark coloured and coagulated before so much could have escaped. Again, the persistence of tenderness on pressure in one spot would seem to indicate some local disease of the stomach near the fundus; and granting this, the discharge of so much fluid blood would be more easily accounted for by the great number of vessels which this part receives from the splenic artery. It is very probable that the immediate exciting cause of the hæmorrhage, whether it arose from rupture or transudation, was the first effort of vomiting at the time when we presume that she vomited her supper. On the other hand, it is not easy to account for the cessation of the hæmorrhage and its non-reappearance if it arose from rupture of a vessel, whilst it would be very simply explained if we adopted the notion of congestion being the cause, as this would be relieved by the discharge of blood; and also taking into account the comparative infrequency of rupture of vessels in the stomach, we should be more inclined to attribute it to congestion; but if this case be taken by itself, the evidence is, we think, certainly in favour of the hæmatemesis being caused by the rupture of a vessel or vessels, either from ulceration or some other cause.

The treatment indicated after her admission was such as would give tone to the stomach and cause contraction of the vessels, so as to prevent the recurrence of the hæmorrhage. The symptoms under which she laboured at this time were those of weakness, combined with the irritation which always follows large losses of blood; pallor of the surface; faintness; giddiness; sickness; coldness of the extremities, whilst the

skin was hot elsewhere; pulse quick, but small; thirst; tongue furred, &c. and the means prescribed were rest in the horizontal posture, which is a measure of primary importance in these cases, and the internal administration of gallic acid (which was shown by Dr. Thomson to be the basis of Ruspini's styptic) every three hours, gradually lengthening the intervals, and ceasing to give it after three days. The only other medicine she had was castor-oil, in small doses, to keep the bowels regular. Under this treatment she got rid of most of the symptoms,—the faintness, giddiness, &c.; the pulse became fuller and less frequent, and her strength increased, and she was discharged cured within six days from the time of her admission.

The *prognosis* of hæmatemesis is generally favourable, especially in first attacks, as here; but should the hæmorrhage return, the prognosis will be much less favourable, as there will be a greater probability even than at present of there being some organic disease.

TESTIMONIAL TO MR. PAGET.

ON Saturday last, March 4th, a Breakfast Service of Plate, of the value of £70, was presented to Mr. Paget by his pupils, as a tribute of esteem, and as an acknowledgment of their obligation to him for the very valuable Demonstrations of Pathological Anatomy which he has, during several sessions, gratuitously delivered at the School of St. Bartholomew's Hospital.

The testimonial was accompanied by an address signed by his pupils, expressing their high sense of his ability as a teacher, and their hope that they and their successors may long enjoy the advantages of his instruction.

BOOKS RECEIVED.

Dr. O'Shaughnessy's Bengal Dispensatory.

Popular Cyclopædia of Natural Science: Mechanical Philosophy, and its Application to the Arts. By William B. Carpenter, M.D., Author of "Principles of General and Comparative Physiology," and "Principles of Human Physiology."

Homœopathy the True Healing Art, &c. By Dr. Ludwig Calmann.

ROYAL COLLEGE OF SURGEONS.

LIST OF GENTLEMEN ADMITTED MEMBERS.

Friday, March 3, 1843.

J. G. Davis.—F. Bellamy.—P. T. Kempson.—F. W. Osborne.—A. Lamb.—C. N. Instan.—T. Worth.—W. Paterson.—S. Poyser.—J. Shaw.—G. Fisher.

A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, February 25, 1843.

Small Pox	5
Measles	14
Scarlatina	22
Hooping Cough	52
Croup	11
Thrush	5
Diarrhœa	4
Dysentery	2
Cholera	2
Influenza	3
Typhus	37
Erysipelas	3
Syphilis	1
Hydrophobia	0
Diseases of the Brain, Nerves, and Senses ..	177
Diseases of the Lungs and other Organs of Respiration	321
Diseases of the Heart and Blood-vessels	23
Diseases of the Stomach, Liver, and other Organs of Digestion	60
Diseases of the Kidneys, &c.	7
Chilblad	11
Ovarian Dropsy	2
Disease of Uterus, &c.	4
Rheumatism	1
Diseases of Joints, &c.	2
Ulcer	0
Fistula	0
Diseases of Skin, &c.	0
Diseases of Uncertain Seat	107
Old Age or Natural Decay	107
Deaths by Violence, Privation, or Intemperance	19
Causes not specified	1

Deaths from all Causes 1003

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude 51° 37' 32" N. Longitude 0° 3' 51" W. of Greenwich.

February.	THERMOMETER.	BAROMETER
Wednesday 22	from 37 to 48	29.24 to 29.30
Thursday 23	38 48	29.39 29.45
Friday 24	33 41	29.56 29.60
Saturday 25	32 39	29.59 29.58
Sunday 26	30 38	29.56 29.36
Monday 27	32 40	28.95 28.86
Tuesday 28	35 41	28.94 29.32

March 1843.	from 30 to 46	29.50 to 29.72
Wednesday 1	25 39	29.79 29.90
Thursday 2	26 39	29.96 30.05
Friday 3	41 29	30.20 30.28
Saturday 4	20 42	30.28 30.25
Sunday 5	31 41	30.18 30.16
Monday 6	18 43	30.11 Stat.

Wind, E. and S.E. on the 22d ult.; N.E. and N. from the 22d ult. to the 4th instant; W. and W. by S. on the 5th; S.W. on the 6th; S.E. and E. by N. on the 7th.

From the 22d to the 28th ult. generally cloudy; rain on the 27th. The 1st inst. morning clear, a little snow in the afternoon, evening clear; since generally clear, except the 6th.

Rain fallen, .275 of an inch.

CHARLES HENRY ADAMS.

WILSON & OGILVY, 57, Skinner Street, London.

THE
LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, MARCH 17, 1843.

LECTURES
ON THE
THEORY AND PRACTICE OF
MIDWIFERY,

*Delivered in the Theatre of St. George's
Hospital,*

BY ROBERT LEE, M.D. F.R.S.

LECTURE XIX.

*On the communication of Scarlet Fever,
Measles, Small-pox, Syphilis, and other
diseases, to the Fœtus in Utero. Dropsy of
the Amnion.*

IN many pregnant women the blood is in a diseased condition, and I am persuaded that this is the cause of nearly all the morbid alterations of structure in the placenta, and other parts of the ovum, which have been described in the last two lectures. Most of the thirteen women whose cases were last detailed, to illustrate the organic diseases of the placenta, were in delicate health, but appeared to labour under no specific complaint; but some specific disease may have been latent in all of them, for we are often prevented from pushing our investigations sufficiently far, under such circumstances, to enable us to ascertain the whole truth. Before taking leave of this subject—the organic diseases of the placenta, and the death of the fœtus in repeated pregnancies—it seems necessary to state the facts which have been ascertained with certainty, respecting the communication of morbid poisons from the mother to the fœtus in utero. Some years ago, I saw a child born in the lying-in ward of St. Marylebone Infirmary, whose abdomen, thighs, and legs, were covered with small and large vesications, which contained a turbid fluid. The mother had been out of health during pregnancy, but did not appear to be affected with any specific disease. Lobstein, and Joerg, have also observed pemphigus on children at the time of birth. A

young married lady whom I have lately attended in her first confinement had a voracious appetite during the last three months of her pregnancy, and indulged in all kinds of stimulating rich food. A few days after the birth of her child, which was apparently healthy, there appeared at intervals with fever a great number of small and large dark coloured vesicles over the lower part of its abdomen, inferior extremities, neck, and head, which had all the characters of pemphigus. These had appeared before the mother's milk could be taken in sufficient quantity to produce the disease, and I have no doubt the disease was communicated before birth. When I first saw this eruption I had some suspicion of a syphilitic taint in the parents, but this was perfectly groundless, and the same effect may be produced, as Mauriceau has so clearly stated, and who knew this disease was not syphilitic, by an excited plethoric state of the mother in the latter months of pregnancy, from the same cause as in the preceding case, improper food. Dr. Webster, who saw this child in consultation with me, recommended in accordance with myself changing the nurse, and giving a grain and a half of chalk and mercury, with some rhubarb, night and morning, for a fortnight, to this child, by which means its health rapidly improved, and the pemphigus disappeared. But the lady's milk did not disappear so readily, and she determined, contrary to our opinion, to make the experiment a second time of suckling her own infant; but before recommencing suckling, she got the child of her wet-nurse to draw out her nipples, and prepare her for the duty she was determined to undertake. In a few days the wet nurse's child was attacked with fever, and pemphigus appeared all over the body. If I recollect right, Dr. Blundell has related in his lectures the case of an infant which was under the care of Dr. Lowder, and was twice cured of syphilis by mercury, but the symptoms recurring a third time, he suspected the infection was drawn

from the mother's milk: the child was weaned, and cured without difficulty.

The disease called by Underwood skin-bound, induration of the cellular membrane, has been observed in some instances completely formed at the time of birth. There are examples of scarlet fever, measles, and small-pox, being communicated to the foetus in utero. In the course of the last year, Dr. Montgomery states that he attended a patient who was delivered a month before her time, when just recovering from an attack of scarlatina: the child's skin exhibited the eruption in several places. "Very many instances," he observes, "of the eruptive diseases have been noticed in the immature foetus and child at birth. Vogel and Rosen mention instances of children born with the traces of measles, and Guersent says he saw an infant born with the eruption on it, having taken the disease from the mother."

Not only has small-pox been communicated by the mother when labouring under the disease, to the foetus in utero, but the contagion has been conveyed to the foetus by the mother when she has been in perfect health.

In the 28th volume of the Philosophical Transactions, there is the history of a woman, who, having had mild small-pox, miscarried with a dead female child, whose whole body was covered with variolous pustules full of ripe matter.

There is another case recorded in the 46th volume. "A woman big with child, having herself long ago had small-pox, very assiduously nursed a maid-servant during the whole process of this disease. At the proper time she brought forth a healthy female child, in whose skin Dr. Watson asserted that he discovered evident marks of the small-pox, which she must have gone through in the womb: and the same physician pronounced that this child would be free from future infection. After four years her brother was inoculated; and Dr. Watson obtained permission of the parents to try the same experiment on the girl. The operation was performed on both children in the same manner, and the pus used in both cases was taken from the same patient. The event, however, was different: for the boy had the regular eruption, and got well; but the girl's arm did not inflame nor suppurate. On the tenth day from the insertion of the matter, she turned pale suddenly, was languid for two days, and afterwards was very well. In the neighbourhood of the incision there appeared a pustule like those pustules that we sometimes observe in persons who, having had the disease, attend patients ill of the small-pox." This case affords undoubted proof that the contagion of small-pox may be communicated to the foetus in utero, where the mother is not affected with the

disease; and the same circumstance must have happened to Mauriceau, before he was born. Van Swieten, says Mr. Hunter, likewise mentions what Mauriceau relates of himself. This author testifies that he had often heard his father and mother say that the latter, when big with him, and very near her time of delivery, had a painful attendance on one of her children, who died of the small-pox on the seventh day of the eruption; and that on the day following the death of this child, Mauriceau came into the world, bringing with him five or six true pustules of the small-pox. "It does not appear, observes Mr. Hunter, however, from this recital, whether or not Mauriceau passed through life free from any posterior infection; but admitting that this eruption of Mauriceau's was truly the small-pox, yet I should very much doubt his having caught it from the child who died of it, as it should seem that the pustules of Mauriceau were of the same date with those of the child who died." Mr. Hunter thought there were two modes in which small-pox could be communicated to the foetus in utero—one by infection from the mother while labouring under the disease, the "other by the mother's having absorbed the small-pox matter from some other person, and the matter being carried to the child from the connection between the two, which we may suppose done with or without first affecting the mother." This view was, indeed, previously stated by Dr. Mead, who relates a case to prove that the foetus in the womb may be infected by the contagion of which the mother does not partake. "A woman, who had long before suffered the small-pox, nursed her husband, under that disease, towards the end of her pregnancy, and was brought to bed in due time. *The child was dead, and covered all over with variolous pustules.*"

These very curious facts I think satisfactorily prove that the contagion of small-pox may be conveyed to the foetus when the mother is not affected by the disease; but if you entertain the slightest doubt on the subject it will be removed by the two following interesting cases, related by Dr. Jenner in the first volume of the Medico-Chirurgical Transactions. If this be demonstrated, it is highly probable that various other morbid poisons may be transmitted to the foetus, and produce their specific effects upon it, without the system of the mother being implicated, and without our being able to trace them to their origin.

"About five years ago," says Dr. Jenner, "I was requested by Dr. Croft to vaccinate the infant of Mrs. W., a lady in Portland Place. The vaccine fluid, which was inserted fresh from the arm of another infant, produced scarcely any effect beyond a little efflorescence on the part, which in a few

days disappeared. On my expressing my surprise at this, such an occurrence happening very rarely, Mrs. W. soon removed my embarrassment by the following narrative. A few days previous to her confinement she met a very disgusting object, whose face was covered with the small-pox. The smell and appearance of the poor creature affected her much at the time; and though she mentioned the circumstance on her return home, she had no idea that her infant could suffer from it, having had the small-pox herself when a child. During a few days after its birth the little one seemed quite well, but on the fifth day it became indisposed, and on the seventh the small-pox appeared. The pustules, which were few in number, matured completely. Dr. Croft, who attended her, being curious to know the effect of inoculation from one of the pustules, put some of the matter taken from one of them into the hands of a gentleman eminently versed in that practice, which produced the disease correctly. Mrs. W. was not sensible of any indisposition herself from this exposure, nor had she any appearance of the small-pox."

"Another case, similar in its general character to the above, was lately communicated to me," says Dr. Jenner, "by Mr. Henry Gervis, a surgeon of eminence at Ashburton, in Devonshire. Mr. Gervis says, 'the small-pox having appeared in the village of Woolson-Green, about three miles from Ashburton, the 6th May, 1808, I vaccinated a poor woman, the wife of James Basquell, who was in the last month of her pregnancy. Her three children had been inoculated the preceding day with variolous matter, by the surgeon who attended the poor of the parish, and who had very properly declined inoculating her also, on account of her particular situation. I made two punctures in each arm, each of which fortunately succeeded, and she regularly passed the disorder, complaining only on the tenth and eleventh days, when the areola was most extended, as is usual. I saw her very frequently during the progress of the disorder, and once or twice after its complete termination; I therefore can speak positively that, during that time, she laboured under no symptom but what is connected with the cow-pox. From this period she continued perfectly well, and on Saturday last, the 11th instant, she was delivered of a female child, having, at the time of its birth, many eruptions on it, bearing much the appearance of small-pox in the early stage of the disease. This event happened five weeks after her vaccination, and one month after she had been exposed to the variolous infection of her own three children, and that of several other persons in the same village. On the 14th I visited the child again, when I found the

eruption had increased to some thousands, perfectly distinct, and their characters well marked. Many among the most respectable physicians and surgeons from Totness, Ashburton, and the neighbourhood, were kind enough, at my request, to come to the poor woman's place of abode and witness the fact. But to put the matter beyond all doubt, I armed some lancets with the virus, and produced the small-pox by inoculating with it. On the 18th the infant was seized with slight convulsions, and on the morning of the 19th it expired.'"

The venereal poison is often communicated to the fœtus in utero through the medium of the maternal blood; and it may either be destroyed and expelled prematurely, in a flaccid putrid state, with the cuticle peeling off, or it may be born alive, covered with a syphilitic eruption, or with gonorrhœa, or purulent ophthalmia. More frequently children so infected are born in an apparently healthy condition, and the disease manifests itself in a very unequivocal manner several weeks after birth. Patches of red coppery discoloration, more or less extensive, appear over the whole surface, and desquamation of the cuticle takes place, without much or any preceding inflammation. "You will see these patches of light coppery red discoloration of the skin," observes Mr. Lawrence, "particularly large and vivid about the face, so that the child's face has a nasty seabby appearance; you observe large fissures at the corners of the mouth, aphthæ of the mucous membrane, and soreness about the eyelids; you find that the nostrils become inflamed and tender, and that a thick viscid yellow secretion stops up the nares, so that the child makes a kind of sniffling noise, and seems as if the respiration were impeded. When you come to examine it, you find the nostrils plugged up with thick yellow matter. In conjunction with these symptoms you find, as you might naturally expect, that the child loses flesh, becomes shrivelled, miserably emaciated, fretful, and irritable, exhibiting marked signs of the most unfavourable constitutional affection; and, in fact, if the disease be not relieved, it very soon sinks under it." A course of chalk and mercury is requisite, and the disease often yields to this treatment if proper food be provided. Comparatively few women affected with secondary syphilis go to the full period, and the expulsion of the fœtus is usually preceded by its death. But children are sometimes born prematurely, where they appear to have been destroyed by syphilis, though the mother has never had the disease in any form or at any period of life. This is disputed, but I have no doubt of the fact. A woman may give birth to a child which has been destroyed by syphilis, and yet she may never have had

any symptom of the disease, local or constitutional. The contagion, in these cases, is conveyed by her from her husband to the child, as the contagion of small-pox is conveyed, if it is not actually introduced before, as Astruc supposes, at the time of impregnation.

When a syphilitic taint exists in either parent, the pernicious influence of the disease in destroying the fœtus may be observed in repeated pregnancies, and I believe that in the greater number of cases of organic disease of the placenta it is not inflammation but syphilis which produces the alteration of structure and death of the fœtus, and that the ordinary constitutional treatment of secondary syphilis with mercury and sarsaparilla should generally be employed where one or more children have died within the uterus. The most remarkable circumstance is the number of years which may have elapsed between the apparent cure of the disorder in the parents, and the manifestation of its effects upon the children. A gentleman may have been fifteen years, or longer, without any symptoms of venereal disease, his wife may be in perfect health, and yet his blood may be so tainted that all his children will die prematurely from syphilis, or exhibit unequivocal secondary symptoms of venereal disease at the time of birth or soon after. It is difficult to comprehend why Mr. Hunter should have doubted the possibility of syphilis being communicated to the fœtus in utero, or on what grounds Mr. Abernethy maintained that the fœtus in utero is unaffected by syphilis till after the sixth month.

Mauriceau has given a very full and accurate account of the symptoms and treatment of syphilis during pregnancy, and of the manner in which it originates. He knew that a child affected with syphilis could communicate the disease to a healthy nurse by suckling; and he accordingly recommends a goat to be provided for the infected child instead of a sound woman. In a paper by Mr. Hey, on the Effects of the Venereal Disease on the Fœtus in Utero, published in the 7th Vol. of the *Medico-Chirurgical Transactions*, the following interesting case has been recorded. In the latter end of the year 1770, and the beginning of 1771, a blind woman, who gained her living by drawing the breasts of women during their confinement, became affected with ulcers at the angles of the lips, which were judged to be venereal. I saw the ulcers, and thought them to be of that description. She had drawn the breasts of a woman who was supposed to be labouring under the venereal disease, and the ulcers did not heal till they were treated as in a case of syphilis. Several women, whose breasts were drawn by this poor woman,

became infected in the manner which I shall now describe.

"Mrs. B. had her breasts drawn twice by this woman: upon the death of her second child, which died of the small-pox, and within three or four weeks afterwards, perceived a swelling of the axillary glands, and complained of soreness in her throat. She consulted the late Mr. Billam, a judicious surgeon, who assured her that the disease affecting her throat was venereal, and treated it agreeably to that opinion. During this treatment she became pregnant, but continued the use of the medicines prescribed till she arrived at the fifth month of her pregnancy. At the end of the seventh month, she miscarried of a dead child. I attended her during labour, and perceived nothing amiss in the vagina or contiguous parts. She assured me that these parts had never been affected with disease, and that previously to this confinement she had borne three healthy children. She became pregnant again in 1772, continued to enjoy good health, and was delivered on February 28th, 1778, of a child apparently healthy, which she herself suckled. When the child was about six weeks old, an eruption, which I judged to be syphilitic, appeared upon its legs and arms. I immediately put both the mother and child upon a mercurial course, giving the former small doses of Hydrar. Submur., and the latter Hydrar. cum Cretâ. By this treatment the child was, in a short time, freed from the eruption, but continued to take the medicine till the beginning of August. In October following two or three small ulcers appeared on the outside of the labia pudendi of the child, and on this account the mercurial course was resumed, with the addition of an occasional dose of Hydrar. Submuriar. The ulcers were soon healed, but in May 1774, the nostrils became sore, and the integuments of the nose were also tender: at the same time the voice of the child grew hoarse. The mercurial course was repeated, and continued for two months. The child also took the medicines during part of the months of September and October, after which time there was no recurrence of disease. In June 1775, Mrs. B. bore another child, which was apparently healthy at its birth, and continued to be so for a few weeks. Blotches of a copper colour then appeared upon the skin, but soon disappeared upon having recourse to the mercurial medicines. After some time the blotches appeared again, and were accompanied by a small ulcer on the labium pudendi, as in the former case. The child was, however, completely cured by a repetition of the treatment, and remained well."

Before taking leave of this subject, I may again observe that it is requisite, in all cases of syphilis during pregnancy, whether the

symptoms be primary or secondary, to give mercury and sarsaparilla, and to employ all the other means which are usually had recourse to in cases of syphilis where pregnancy does not exist. Blue pill, or chalk and mercury, are, perhaps, the best preparations which can be used. I do not know from actual observation whether mercury acts like a poison on the child, as some have asserted, and as I formerly believed. It is difficult to understand why it should poison a child in utero, and have the effect, after birth, of counteracting the poison of syphilis.

DROPSY OF THE AMNION.

The preternatural distension of the uterus by an excessive quantity of liquor amnii, in the latter months of pregnancy, forms one of the most distressing complications of the gravid state, and has not unfrequently given rise to dangerous errors in practice. In the works of the earlier writers on the diseases of pregnancy, and particularly in those of Mauriceau and Lamotte, we find cases recorded of dropsy of the uterus. Similar cases are to be met with in the writings of Baudelocque and Gardien; and these authors are the first who seem to have been acquainted with the general fact, that the fluid in this affection is contained within the cavity of the amnion. It was not, however, until the publication of M. Mercier's paper on this subject, in 1809, that any attempt was made to determine the true pathology of the disease by an accurate examination of the contents of the gravid uterus. His paper contains three cases of acute dropsy of the amnion; and from the appearances observed in the foetal membranes, he has deduced the general inference that the inordinate secretion invariably depends on inflammation of the amnion. The first case is that of a woman, æt. 30, five months pregnant, who, after being fatigued and overheated, drank a quantity of cold water, and was in consequence seized with pains in the region of the pubes and loins, cold shivering, nausea, anxiety, and cough. The pain in the lower part of the abdomen increased, and the hypogastrium became tense and swollen. On the 16th day, the abdomen being greatly enlarged, labour pains came on, and ten pints of liquor amnii were discharged, and afterwards two fœtuses, which scarcely shewed any signs of life, were expelled. The foetal surface of the amnion was partially coated with false membrane, and the amnion itself covered with blood-vessels, and of a rose-red colour.

In the second case, the infliction of an injury during pregnancy was soon followed by vomiting and lancinating pains in the hypogastric region, and pyrexia. On the 10th day after the accident, the pains having been relieved by bleeding, the abdomen

began to acquire an unusual size. On the 43d day the abdomen had become enormously swollen, and the respiration was laborious. The membranes were soon after punctured with a long needle, and as the water flowed, the tumefaction gradually subsided; labour pains came on the following day, and two dead children were expelled. In this case about a quarter of the foetal surface of the amnion was inflamed, being of a deep red colour, and double the natural thickness. The third case resembled the two preceding in all essential circumstances, and the appearances observed in the amnion were nearly similar.

In 1817, Scarpa published a memoir on ascites complicated with pregnancy, but it contains no observations relating to the nature of dropsy of the amnion, nor to the symptoms by which it can be distinguished from effusion of fluid into the general cavity of the abdomen.

In the last lecture I related several cases of this affection in which it was complicated with organic disease of the placenta; and in many other cases which have come under my observation it has been combined with hydrocephalus, or some malformed or diseased condition of the fœtus, which rendered it incapable of supporting life subsequent to birth; and the same circumstance has been observed in most of the cases which have been recorded by the authors to whom I have alluded. In very few of the cases which I have seen has the formation of an excessive quantity of liquor amnii been accompanied with inflammatory and dropsical symptoms in the mother, and in none did the amnion exhibit those morbid appearances produced by inflammation which M. Mercier has described, and which led him to infer that inflammation of the amnion is the essential cause of the disease. When unconnected with a dropsical diathesis in the mother, I am disposed to consider it merely as one of the numerous diseases of the fœtus in utero which arise from constitutional disorder in the parents, and more especially from syphilis.

The diagnosis of dropsy of the amnion is most difficult in the simple form of the disease, when the effusion has taken place to a great extent, and when complicated with ascites. In both these cases, fluctuation, more or less distinct, can be perceived on percussion of the abdomen; but we can obtain from this sign no positive information to enable us to determine whether the fluid be contained in the cavity of the peritoneum or amnion, or in both these membranes. In the simple form of dropsy of the amnion, where the quantity of fluid is not excessively great, the fluctuation is obscure, deep-seated, or wholly imperceptible. The presence or absence of fluctuation is therefore no certain

test of the existence of the disease, and the only mode of arriving at a correct diagnosis, both in its simple and complicated forms, is by instituting an examination per vaginam. By this proceeding we shall not only be able to ascertain the changes in the uterus consequent on impregnation, but the accumulation of a preternatural quantity of fluid in the membranes of the ovum. This latter circumstance is known by the enlargement of the body of the uterus, by the state of its cervix, which is almost entirely obliterated, by the ballottement of the fœtus, and by the sense of fluctuation in the vagina on percussion of the abdomen.

In ascites, complicated with pregnancy, Scarpa has observed that the symptoms are entirely different from those of hydrops amniosis. The regular form of the fundus and body of the pregnant uterus, he states, is not evident to the touch in these cases, from the enormous distension and prominence of the hypochondria, arising from the great quantity of fluid interposed between the fundus and posterior part of the uterus and abdominal viscera. The urine is scanty and laiteritious, and the thirst is constant. The abdomen, upon percussion, presents a fluctuation obscure in the hypogastric region and in the flanks, but sufficiently sensible and distinct in the hypochondria, and strong and vibratory in the left hypochondrium, between the edge of the rectus muscle and the margin of the false ribs. These symptoms, with the previous history of the patient, may afford us, in doubtful cases, some assistance in the diagnosis; but our principal dependence, as I have before said, must be placed on the information acquired by a careful examination of the state of the cervix and body of the uterus.

Having arrived at a correct diagnosis, the treatment of dropsy of the amnion becomes simple. As little or no benefit is usually derived from blood-letting, diuretics, or cathartics, the best mode of relieving the urgency of the symptoms is by puncturing the membranes, and evacuating the superabundant liquor amnii. The probe-pointed stillettèd catheter, which you have already seen, is the best instrument you can employ for this purpose. In a great proportion of the cases, where this operation has been resorted to sufficiently early, it has been attended with success, and in several the life of the child preserved. In others, the spontaneous rupture of the membranes has been followed by alleviation of the symptoms, and the birth of the child. The only difficulty that can arise respecting the treatment is in cases of dropsy of the amnion complicated with ascites. Even here I should recommend the evacuation of the liquor amnii as the best remedial measure that can be employed; since it relieves the leading symptoms pro-

duced by the pressure of the excess of fluid in the peritoneum and amnion on the neighbouring organs, which are, in fact, the only symptoms we have to counteract, and is followed by the expulsion of the contents of the uterus. After delivery, the effusion into the peritoneal cavity, if it depend on uterogestation, will spontaneously disappear. If it be the effect of hepatic or other visceral disease, it may be treated by appropriate remedies.

Edema of the feet and ankles during pregnancy is very common, and the recumbent position and gentle cathartics are the only remedies required. Sometimes the swelling extends over the whole body, and is accompanied with severe febrile and inflammatory symptoms, determination of blood to the head, and effusion of serum into the peritoneal sac and into the cavities of the pleura and pericardium. The pulse is quick, the breathing oppressed, and the urine scanty and albuminous. Venesection and purgatives are the most important remedies in these cases of inflammatory dropsy in pregnant women; but if the symptoms are not relieved by this treatment, and especially if the dyspnœa increases, the induction of premature labour becomes necessary, and it should not be too long postponed. In some cases the secretion of urine is almost completely stopped, and diuretics and all other remedies are useless until delivery has taken place, when the kidneys immediately after begin to perform their function with the greatest activity, and the whole dropsical fluid is speedily removed.

LECTURE

ON

ANIMAL ELECTRICITY,

*Delivered at the Polytechnic Institution,
before the Members of the Electrical
Society,*

By H. LETHEBY, M.B. A.L.S.

Curator of the Museum, and Lecturer on Comparative Anatomy at the London Hospital.

GENTLEMEN,—I have the honour of directing attention this evening to a subject which appears to me to be very peculiarly adapted to the notice of your society, namely, *animal electricity*; a subject, too, which has not, until within the last few years, commanded that attention it really deserves: and this is somewhat surprising, especially when we consider how much interest there is attached to it, from its offering the fairest means of elucidating some of the most intricate problems in the whole science of physiology. Moreover, if the study of electrical phenomena among the elements of

the inorganic kingdom be deemed worthy of the attention of our greatest philosophers, and has even, from its importance, called for the constitution of a society like this, to be devoted entirely to its progress; surely such a study must become vastly more important when it is found that it extends its relations to the living world, and that many of the phenomena of life are, in all probability, intimately connected with it. But though we offer such an opinion as this, and it will be our endeavour, during this lecture, to prove the identity of the nervous and electrical forces, and to show that current electricity, consequent on certain chemical changes which are constantly going on in the living organism, is the immediate cause of functional activity, yet I would warn you from falling into the error of supposing that we have therefore discovered the abstract principle of life; and you will understand that it is not my intention, this evening, to have any thing whatever to do with such an inquiry. It is by the pursuit of investigations like these that the progress of physiological science has been much retarded: nor, indeed, is this the only science which has suffered from such abstract reasoners. We should bear in mind that, with all our discoveries and analogical methods of inquiry—with all the facilities of investigation which modern science has placed at our disposal—we shall yet never discover, or be permitted to know, what life, or electricity, or heat, or magnetism, or indeed the force of any dynamic action is in its essence. To the cost of years of toil and harass, in such pursuits, have too many inquirers found that they were in search of a principle concerning which the human mind can scarcely have a conception. The phenomena, however, which characterize the existence of these forces are evident to all; and their energies would not have been misspent, or their labours fruitless, had they been directed to a study of them, and of the laws which govern their manifestation.

It will be my object, this evening, to point out those peculiar classes of phenomena which are manifested by certain fish, to show that they are electrical, and that their manifestation is dependent on the integrity of the nervous circles; to show, also, that electricity can be detected in all animals during the active performance of their functions, and that these are dependent on the continuance of chemical action; to prove, moreover, that a current of electricity sent along the nerves of the living organism is capable of simulating precisely all the functional phenomena of the animal body; from all which must result the opinion that the element of nervism is electricity; and if I succeed in establishing these propositions, I shall put you in pos-

session of a more tangible and better understood principle than that which has hitherto gone by the name of the nervous force. It is true that we are still as far off in our ideas of the nature of electricity, and that, by such a change, we have merely substituted one unintelligible principle for another: but we have done more than this; we have wiped off one from the many forces whose abstract nature has been so fruitlessly sought after; and there will be no little benefit conferred on science should another Newton be born to generalize upon the numerous and apparently diverse phenomena of nature, and reduce them at last to the action of one principle. Nor is it unreasonable for us to hope for this, or anticipate that that principle may be electricity. Its study, however, must become more general; in relation to physiology at least, more attention must be bestowed upon the physical sciences before we can ever expect to make much advance. Hitherto, with but few exceptions, the consideration of chemical actions has been deemed wholly unconnected with vital phenomena; but, thanks to Liebig, we hope to see these opinions banished, together with all the prejudices which have been incidental to their association. And what must follow upon this? The study of electricity; and from this important tract we shall have branching off a path of inquiry in which, I trust, we shall soon be making a progress as rapid and useful as that which has characterized the advancement of electrical science in its relation to the inorganic kingdom during the past century.

There are certain fish, but more especially the torpedo, on account of its being better known, which, from time immemorial, have been notorious for their power of evolving something from their bodies capable of producing a numbing sensation on the hand which touched them, and this property has led to the application of various names indicative of its nature: later investigations, however, have shown that the torpedo is not the only fish endowed with this power, but that it has been manifested in the *Gymnotus*, the *Malapterurus* or *Silurus*, the *Trichionus*, the *Tetraodon*, and the *Rhinobatus*; and from the great analogy of the phenomena which they exhibit with those of ordinary electricity has arisen the specific name of *electricus*, which has been applied to each. At first sight we should be led to imagine that the existence of such a singular property implied a great anatomical as well as zoological relation, and that these animals must possess a structure which not only closely allied them to each other, but essentially distinguished them and set them apart from other fish: such, however, is not the case; on the contrary, we find that they occupy positions widely

removed from each other, and that though they possess an organ which gives them the power of exhibiting these phenomena, yet it is but of a secondary or tegumentary nature, and is developed without any infringement on those characters which are common to the genera in which they are placed.

But before I enter into any specific account of the anatomy of these singular fish, it will be more in order if I direct your attention to some of the phenomena which they exhibit, beginning with those of the torpedo, whose effects, until very recently, were the only ones accurately known. The *shock* was that which commanded the earliest attention, though its nature was not philosophically investigated until about the close of the eighteenth century, when Walsh conducted a series of ingenious experiments on this fish, and found that its effects were conducted easily through metals, but they were intercepted by those bodies which were regarded by electricians as non-conductors. In the course of his experiments, also, he discovered the different electrical relations of the back and belly, and, through this, was able to obtain stronger shocks. On one occasion he caused a torpedo to shock eight persons simultaneously. He noticed, moreover, that the discharges were voluntary, and were not performed with any regularity; at one time he counted fifty in a minute and a half, while at others they were few and irregular. He observed, also, that the shocks were stronger in air than in water. Believing these effects to be absolutely electrical, he endeavoured to obtain the spark and evidence of attraction and repulsion, but without success; yet he compared the phenomena to those produced by a quantity of electricity diffused over a large space, and he simulated them by means of a Leyden phial and Lane's electrometer. A few years after, the Hon. Mr. Cavendish very completely imitated all the effects which Walsh had observed, by means of a battery of large surface weakly charged. From these, other inquiries were set on foot; and though they were rather of a contradictory nature, yet on the whole they tend sufficiently to prove their identity with those of ordinary electricity. For instance, in 1827, M. De Blainville and Fleuriau asserted that they had obtained a deflection of the magnet by connecting the two surfaces through Swiggie's multiplier. Two years after this, however, Sir H. Davy was completely unsuccessful in every attempt to identify the phenomena, although he still believed they were electrical; but his brother, Dr. Davy, in following out the investigation, and by using more lively fish, was able to make small needles magnetic, to deflect the galvanometer, and produce chemical decomposition: still, he could not obtain the spark, or get the discharge to pass through air,

whether rarified, or moist, or dry. By using Harris's electroscope, however, he had evidence of a heating effect; and from these experiments he ascertained that the dorsal surface of the fish was positive, and the ventral negative. Subsequent to these, Linari and Mattencci have been more fortunate in obtaining the spark; and in still later times experiments have been made by Zantedeschi and others, all of which are confirmatory of the absolute identity of the phenomena which this fish exhibits with those of ordinary electricity; and the laws which regulate the discharge are, that they are voluntary, that the dorsal surface is positive to the ventral, that the discharge takes place through the conductor from the former to the latter, and moreover, as we shall by and by find, that it is dependent on the integrity of the nervous system.

Respecting the electrical nature of the phenomena of the gymnotus, we have ample evidence from the experiments of Williamson, Humboldt, Walsh, Fahlberg, Guisan, and others; but more particularly from the investigations of Professor Faraday upon the fish formerly belonging to the proprietors of the Adelaide Gallery. During these he obtained the shock, deflected and made magnets, decomposed iodide of potassium, and saw the spark. The liberality of the proprietors also afforded Professor Sconbein an opportunity of verifying these results; and the laws which have been observed to regulate the discharge are, that it is voluntary, and takes place from the head through the water to the tail, the anterior parts of the animal being positive to the posterior.

Dr. Faraday compared the shock to that of a large Leyden phial, charged to a low degree, or to that of a good voltaic battery of perhaps one hundred or more pairs of plates; and he endeavoured to form some idea of the quantity of electricity which was sent at each discharge, by comparing the effects with those which resulted from the passage of electricity from a large Leyden phial, between two brass bulbs, which were placed about seven inches apart in a tube of water, taking care to lessen the intensity by having several strands of wetted string intervening somewhere in the circuit: with this arrangement, when a discharge took place, and the hands were placed in the water, a shock was felt exactly like that of the fish; and judging from this, as well as from the amount of chemical decomposition and degree of magnetic deflection, he believed it equal to that of 3500 square inches of glass, coated on both sides, and charged to the highest degree; while Prof. or Sconbein compares it to that of a hydro-electric pile of 200 pairs. This quantity the Gymnotus is capable of passing again and again with scarcely an appreciable interval, and doubtless, in its native rivers,

the effects are still more tremendous; as indeed we learn from the graphic description which Humboldt has given us of the Indian method of capturing the fish, "which consists in exhausting their energy by making them give repeated shocks. This they do by driving a number of wild horses and mules into the lakes which they frequent." Humboldt saw about thirty of these forced into a pool containing numerous gymnoti. The Indians surrounded the banks closely, and being armed with harpoons and long reeds, effectually prevented the escape of the horses. The fishes were aroused by their trampling, and coming to the surface, directed their electrical discharges against the bellies of the intruders. Several horses were quickly stunned, and disappeared beneath the surface of the water; others, exhibiting signs of dreadful agony, hurried to the bank with bristled mane and haggard eyes, but there they were met by the wild cries and violent menaces of the Indians, which forced them again into the water; and when, at last, the survivors were permitted to leave the pool, they came out enfeebled to the last degree, and their benumbed limbs being unable to support them, they stretched themselves out upon the sand completely exhausted. In the course of five minutes two horses were drowned. By degrees the discharges of the gymnoti becoming less intense, the horses no longer manifested the same signs of agony, and the wearied fishes approached the margin of the pool almost lifeless, and then they were easily captured by means of small harpoons attached to long cords. The fishes left in a pool thus disturbed were found scarcely able to give even weak shocks at the end of two days from the time of the combat. In this way mules are destroyed in attempting to ford rivers inhabited by the gymnotus; and so great a number of mules were lost within the last few years at a ford near Uritucu, that the road by it was entirely abandoned. When small fishes receive the shock, they immediately turn upon their sides stunned; and the gymnotus seems aware of the best means of concentrating its effects, by either attaching itself literally to a large surface, or else by forming a part of a circle, and making the animal complete it.

It is these immensely powerful effects of the gymnotus that has enabled us to clear up several points relative to the phenomena of electrical fish; for in the torpedo they are so weak that the fishermen on the Italian coasts handle them as playthings; the effect at the greatest is but a slight trembling, which is rarely felt above the elbow. Stories have been told by travellers of persons being knocked down when they accidentally trod on the torpedo as it lay buried in the sand on the sea-shore; but these are doubtless

exaggerations, for Dr. Davy never saw the smallest fish affected by them, and there is the greatest doubt thrown over the statement of Reaumur, who asserts that he once saw a duck killed by its repeated discharges.

Respecting the phenomena of the other electrical fish I have but little to say. Lieutenant Paterson is the only individual who has reported on the malapterurus of the Nile and Niger, and he says that on taking one by the hand its shock was so great as to oblige him to quit his hold. There remains little doubt, however, that the phenomena of the rest of the electrical fish are identical with the preceding.

Having, then, briefly reviewed the phenomena of these peculiar fish, our next point of inquiry will be into *their anatomy and general character*.

The torpedo, which is the most common of all, belongs to the order Raia of the class of cartilaginous fishes: it is distinguished by its circular disc or body, large pectoral fins, and short tail.

It is a native of many of the European shores of the Atlantic, and of the several seas which branch from it, being, however, almost entirely limited to between the 30th and 50th deg. of South latitude: it is very common in the Mediterranean, more especially along the Italian coasts, and it is also frequently found on the southern shores of England, as well as in the western parts of France. In these different localities the torpedo has received various names, all, however, having reference to its peculiar numbing property. Thus, in Italy, they are named *Haddaya*; in France, *La Tremble*; and in England they are called the *cramp*, or *numb fish*.

The Italians, moreover, have two species of this fish, both being very commonly met with in their markets, where they are sold, as articles of food, to the lower orders. One kind they term the *Tremola*; the other, from its spotted appearance, *Occhiatella*. Of these some naturalists have made many species, but Dr. Davy, who has paid most attention to the subject, is of opinion that they may be reduced to these two species of the Italian, all others being merely varieties; and in this he is supported by Cuvier and Rudolphi: for the first of these he proposes the name of *Torpedo diversicolor*, which includes all the mottled varieties, such as *T. marmorata*, and *galvanii*; the second species he names *Torpedo oculata*, a term which he prefers to *occhiatella*, or *ocellata*, and is applied to all such as have the eye-like markings on the back. In general appearance the torpedo resembles the skate, from which, however, it is distinguished by a short tail and round body: it is not covered by scales, but by a thick slimy mucus, secreted by numerous glands situ-

ated immediately beneath the skin. On making an incision along the mesial line, and reflecting the skin outwards, we see a thick aponeurosis, composed of two sets of fibres, the most superficial of which run longitudinally, and are very dense, while the deeper layer runs transversely. On elevating these, we observe an organ of a peculiar structure, having the appearance of honey-comb; this is the battery, and between each of the polygonal cells of which it is made we find the before-mentioned aponeurosis dipping down, and so appearing to effect its subdivision, but in reality it is an element of its formation, as we shall by and by describe. (See Fig. 1.)* This battery is somewhat of a kidney shape, being concave internally where it dips into the several irregularities of the head and branchiæ, convex externally where it is applied to the semilunar cartilage of the great fin, and rounded before and behind. On carefully examining the battery we find it is made up of numerous six-or-eight sided tubes, which extend perpendicularly quite through the fish, and each tube is further divided by a multitude of transverse septa into compartments, which contain an albumino-gelatinous fluid. In the recent state these septa are not so readily seen; indeed, Dr. Davy questioned their existence, but in specimens which have been preserved in alcohol they are very evident. (See Fig. 2.) The organ, then, we find is composed of numerous polygonal tubes or columns, which in their turn are made up of a multitude of compressed cells. Now the number of cells or transverse septa in a tube varies according to its length: on the average Hunter found 150 to the inch, and in a very large fish there were in each organ 1182 tubes more than an inch long; from which we may calculate there were not less than 400,000 of these cells in the two batteries: in this way the surface is considerably extended. Lacedepede calculated that it amounted in a torpedo of ordinary size to about 58 square feet, and the surface, according to Hunter, increases with the growth of the animal; that is, fresh septa, as well as tubes, are added yearly. I have, however, great reason to doubt the accuracy of this statement, for by a comparison of the distances between the septa of some small fish which I have had an opportunity of examining and comparing with those of Hunter's, in the museum of the College of Surgeons, I find that the latter are much wider apart: and further, this opinion of Hunter seems to be contradicted by the general electrical effects of these fish at different ages, for all experimenters have found that the smaller fish give the greater shocks; and these, I apprehend, are owing to the

closer approximation of the insulators, and consequently the charge is capable, as in a thin Leyden jar, of acquiring greater intensity.

The different cells of the battery as well as the tubes are kept together by a loose kind of cellular tissue, in which ramify the blood-vessels and nerves, the latter being very abundant.

Nervous system.—In looking at the brain of the torpedo, and comparing it with that of the skate, (Figs. 3 and 4), we are struck with the comparatively small size of the centres of the true nerves of sense; there is a want of resemblance also in the figure and size of the cerebellum: but the great point of difference is in that part of the nervous centre whence emanate the nerves supplying the battery: I allude to the medulla oblongata, which gives off the 5th and 8th nerves: this in the torpedo is very large, larger indeed, relatively, than that of any other animal. There is not time for me to give an account of the distribution of the several cerebral nerves, which does not, moreover, differ very essentially from that of other fish, but I shall limit myself to a description of these great nerves of the battery, namely, the 5th and 8th. The 5th pair arises from the medulla oblongata, and passing upwards and outwards, divides into two great branches, the first of which, again dividing into two other branches, proceeds forwards, and winding over the anterior part of the cranium, is distributed to the numerous mucous glands situated upon its under surface. The second great trunk also subdivides into two branches, one of which winds along the anterior margin of the battery, and is distributed to the mucous glands there situated, while the other, or the first electrical nerve, after giving off glandular twigs, as well as motor nerves and branches, to the adjoining branchiæ and auditory apparatus, plunges into the anterior part of the electrical organ, and is distributed to its superior portion.

The 8th pair also arises from the medulla oblongata, and passes outwards through the cartilaginous cranium, where it divides into several branches, which pass between the branchiæ, giving off filaments to them as they pass, and then each plunges into the corresponding portion of the battery, where it spreads out, and is distributed through its substance; another large branch goes to the stomach, where it is lost, while a considerable twig passes backwards towards the tail, to the muscles of which it is distributed: in the Ray all these nerves are seen, but they are much smaller.

The vessels which go to the electrical organ are not so numerous as Hunter supposed: they are derived from the branchiæ, and are not of sufficient moment to detain us in their description.

* The figures referred to will be given at the end of the lecture, in our next number.

We come now to an examination of the *gymnotus electricus*, from the dissections of two of which, kindly supplied me by Mr. Hawkins, I am able to give ample detail. These animals, of which there are several non-electric species, are so named from the absence of a dorsal fin, and this especially distinguishes them from the eel, to which they bear a great resemblance. The *gymnotus electricus* is an inhabitant of the fresh-water rivers and lakes of south America, being very common in the Llanos de Caracas, and the waters which flow into the Guyana: here it attains the great length of five or six feet: its body is smooth, uncovered by scales, but lubricated by a thick mucus; the eyes are small, and very near the nose; around the mouth are numerous papillæ; beneath and just behind the under jaw is the anus. The abdomen is of very limited extent, the greater part of the fish being made up of the muscles of progression and the electrical organs: these are brought into view by reflecting the skin from the side, together with a dense aponeurosis which covers them, and is continuous with that forming the intermuscular septa. In this stage of the dissection we observe superiorly the dorsal muscles; then the greater electrical organ, composed of longitudinal laminae; thirdly, an inferior plane of lateral muscles; and lastly, the lateral fin muscles, on reflecting which we see the lesser electrical organ.

In a transverse section of the fish (Fig. 5) all the parts are better discriminated, and the dorsal muscles are found to be made up of four or five planes, between which exists an aponeurosis; the longitudinal laminae of the electrical organs also are seen to extend inwards quite to the mesial line: on each side of the vertebral columns are the cut ends of the peculiar nerves of Hunter, but which are the dorsal branches of the fifth, while beneath the spine are the systemic vessels, then the air sac, and lastly a perpendicular aponeurotic septum, which separates the fish into two lateral valves. Observing the electrical organs more closely, we find that each lamina is subdivided by perpendicular septa, which are seen as well in a longitudinal as a transverse section of the battery, and this results from their pursuing an oblique course from within outwards. These septa effect so many divisions or cells in the laminae, and they are filled with an albumino-gelatinous fluid; so that, to review, we find the electrical organ of the *gymnotus* composed of laminae which in their turn are made up of cells; and this arrangement is precisely similar to the battery already described belonging to the torpedo: the surface, however, is much more extensive: thus, in a *gymnotus* of three feet and a half long, which I examined, there were upwards of

fifty of these laminae in the two organs on each side, while the entire battery contained about 550,000 cells, which were much larger than the compressed hexagonal cells of the torpedo. Laccpede calculated that the discharging surface of the organs of one of these fish, four feet in length, was at least one hundred and twenty-three square feet.

The shape of the greater electrical organ is that of a wedge, commencing by a broad rounded border just behind the head. As it proceeds backwards it gradually tapers from the termination of the inferior laminae. The lesser organ begins from a point behind and beneath the preceding, and becomes broader and broader towards the tail, where it ends: at the origin as well as termination they are both very thin.

These organs are largely supplied by nerves which are derived from the spinal cord: according to Rudolphi they are 224 in number: each issues through the interspinal foraminae, and passing down over the air-bladder and longitudinal septum, they divide and sub-divide into long straight branches, which give off filaments opposite each lamina to the numerous electrical cells. The dorsal branch of the fifth, as far as I could make out, did not give any branches to the battery, but seemed to supply the muscles in its course. These spinal nerves of the *gymnotus* are very large, in comparison with the same nerves of the eel or conger; and the brain also exhibits several points of interest, particularly in the large size of the cerebellum (see Fig. 6.) Of the anatomy of the *silurus* of Linnaeus, or *malapterus* of Laccpede, I have very little to say: its anatomy has been made out by the dissections of Geoffroy, Rudolphi and Muller, and Valenciennes. The fish inhabits the Niger, the Senegal, and the Nile. There are two electrical organs on each side, which are separated by an aponeurotic membrane: the external one, which extends all round the animal, lies superficially or directly under the skin; the deeper one rests on the muscles: they are composed of a dense aponeurosis, whose fibres in the external one run obliquely, and thus form lozenge-shaped cells, which are very small, and filled with a gelatinous substance. Both these are supplied by nerves. Thus, the superficial battery is supplied by the eighth, which runs under the aponeurosis before mentioned, and sends about 12 or 14 branches through it to pierce the organ, and be distributed to it: the internal organ is supplied by small branches from the intercostals. The structure of the *trichiurus*, which frequents the Indian seas, and of the *tetraodon*, which is met with along the shores of Johanna, one of the Comoro islands, has not in either case to my knowledge been described.

[To be concluded in our next.]

REMARKS
ON
CERTAIN DISEASES OF THE EYE.

By JOHN CHARLES HALL, M.D.

Member of the Royal College of Surgeons of
London, &c. &c. &c.

(For the London Medical Gazette.)

Interesting case of malignant disease of the Eye. Extirpation of the organ. With a few observations on the physiology, pathology, and treatment of similar cases.

EACH stage of existence, each period of life, appears to have certain diseases peculiar to it: thus, one of the well-known characters of carcinoma, in general, is to attack persons advanced in life, rather than children, and others under the age of puberty. It follows, therefore, that the remark of Desault, that "*cancer of the eye is most frequent in children,*" appears at first sight a position inconsistent with the usual nature of that disease. Still, it is a statement difficult to contradict, supported as it is by the testimony of Bichat, who affirms, "*that in twenty-four persons affected with what is called carcinoma of the eye, twenty at least are under twelve years of age.*" Here, the truth, as in many other questions relative to disease, would never have been attained without the assistance of morbid anatomy, which prevents our confounding distempers, which bear some resemblance to each other, but which are in reality altogether different. We are much indebted to Mr. Wardrop for his interesting observations,* in which he has clearly proved that the disease which renders a severe operation so frequently necessary in children is not *true cancer*, but what is now termed *fungus hæmatodes*. Scarpa† remarks: "This author has afforded a solution of the question, by showing, from careful observation, founded on pathological anatomy, that the morbid change of structure in the eyeball of a child, commonly called carcinoma, is not in reality produced by cancer, but by another species of malignant fungus, to which the epithet *hæmatodes* is applied—a disease, indeed, equally, and,

with regard to the eye, more formidable and fatal, than cancer, but distinguished from it by peculiar characters, which, not being confined to any part of the body, or to age and sex, attack the eyeball both of the infant and adult."

Before we proceed to consider more particularly the relation between *cancer* and *fungus hæmatodes* of the eye, it may be necessary to advert briefly to a few very remarkable points of distinction.

1st. The primary origin of *fungus hæmatodes* is for the most part in the retina, generally commencing at the point where the optic nerve enters the cavity of the eye.

2d. *Cancer*, if it commences in the eye, attacks the superficial portions of it in the first instance, gradually involving the more deeply seated parts, and, as far as our present evidence extends, the surface of the conjunctiva and the lacrymal gland are the only textures belonging to the eye primarily affected with carcinoma.

3d. It is the opinion of Scarpa that *cancer* of the eye is much less destructive than *fungus hæmatodes*, because it commences on the external portion of the organ; so that whatever relates to the formation and progress of the disease is open to observation.*

4th. The last distinction between what is called *cancer*, and *fungus hæmatodes*, that we shall notice, is the pulpy softness of every portion of the diseased mass in the last of these diseases—a character completely opposite to the firm unyielding *carcinomatous fungus*.

The word *cancer* (καρκίλος, literally a crab) has undergone several changes since its first introduction into medical language. The Romans applied it to the several conditions of gangrene and sphacelus, while the Greeks used the term *carcinoma* only to designate the disease known to us as *cancer*: at a later period, however, authors used it as a synonym of carcinoma, or carcinos (καρκίνωμα, καρκίνος.) It would extend this paper far beyond its prescribed limits were we to inquire the origin of this term; whether it was used in the first instance from a supposed resemblance to the body and claws of a crab, or from the idea that an animal devoured the affected part, or with the

* Observations on Fungus Hæmatodes: Edinburgh, 1809.

† Translated by Briggs, 2d Edition, p. 502.

* Scarpa is also of opinion that a cancerous fungus on its first appearance is not malignant, but that it becomes so in process of time.

intention of conveying the notion of something particularly loathsome in the nature of the complaint. It is not improbable that all the above considerations influence the selection of the name. It was, however, at first supposed to be a disease, confined only (or in most cases) to the breast, and on turning to Paulus ab Ægina* we have his description of cancer in the following words. "Cancer—a hard irregular tumor, sometimes with and sometimes without an ulcer, which may arise in any part of the body, but most frequently attacks the breast." Early observers, remarking the very great difference between the ulcerated and non-ulcerated stages, considered it right to apply different terms to each: the name of *cancer* was applied to the former state, and that of *scirrhus* to the latter. Again, the scirrhus stage was subdivided into two; viz. the simply scirrhus, and the occult cancerous, the commencement of pain, being the barrier between them.

From the great resemblance of some of the features of the morbid mass, now recognised by the term encephaloid, to those of carcinoma, the name of *soft cancer*, was very generally made use of to designate that disease. In 1812, Bayle, recognising the fundamental similarity of hard and soft cancer (of encephaloid and scirrhus), without any wish of underrating the importance of their individual peculiarities, maintained the propriety of designating them by the same general name. "To our countryman Dr. Young," (remarks Dr. Walshe in his lucid article on cancer),† belongs in reality to the merit of having been the first to unite scirrhus (*carcinoma scirrhosum*) and encephaloid (*carcinoma spongiosum*) as species of a genus *cancer* or *carcinoma*." But his example has been very slowly followed. English writers, with the exception of Mr. Travers, more keenly perceptive of the differences rather than of the analogies of these products, have almost to the present day continued to define cancer as ulcerated scirrhus, and to separate encephaloid completely therefrom, under the title of fungus hæmatodes. Nevertheless, opinion had been silently undergoing a change among us; we had been gradually learning to

recognise "the practical truth and importance of Dr. Young's nosological arrangement, when Dr. Carswell deprived us of all excuse for wavering, by satisfactorily proving its justness.

The researches of Laennec, Otto, Cruveilhier, and, lastly, of Müller, have very clearly established the close relationship of another growth, originally described by Laennec as *colloid*, to scirrhus and encephaloid; to this tissue also the generic term cancer has been proved, by Dr. Walshe, to be equally applicable.

He remarks, that "the union of these morbid structures into a distinct class is not a mere nosological artifice; it is manifest that the formations to which we propose to apply the generic term cancer possess characters entitling them to be grouped together, and separated from all others to which the frame is exposed." They agree *anatomically*, for they are all composed of a containing and a contained part, forming a combination without its counterpart in the natural structures. They agree *chymically*, for they are all distinguished by the vast predominance of albumen in their composition. They agree *physiologically*, for they all possess in themselves the power of growth, and of extension by continuity of tissue; that is, of assimilating to their proper substance the most heterogeneous materials—an inherent tendency to destruction, and the power of local reproduction. They agree *pathologically*, for they all tend to affect simultaneously, or consecutively, various organs in the body, and produce that depraved state of the constitution known as the cancerous cachexia. "Their title," continues this writer, "to be united is quite as strong, in respect of practical medicine and surgery, as in respect of scientific pathology, a consideration of the very highest importance. As respects the name to be given to the genus, *cancer*, or *carcinoma*, is clearly the best: to limit these terms to one particular tissue, when others possess the very properties on account of which they were originally employed, is a palpable contradiction."

The following table well illustrates the varieties of cancer, from which it will be seen that Dr. Walshe considers cancer is synonymous with adventitious heterologous tissue. We

* Lib. vi. chap. 45.

† Cyclopædia of Practical Surgery, p. 591.

may here remark, that the fact of its being a tissue—in other words, that it possesses a peculiar structure—unequivocally separates it, as a morbid product, from others belonging to the same class; for example, *tubercle* and

pus. The heterologous material of all carcinomatous formation is organizable, capable of vascular development, and therefore undergoes all those changes of increase and decay consequent on such susceptibility.

CANCER.

Family.	Class.	Order.	Species.	Varieties.	Synonyms of the Species.
Adventitious formations	Heterologous formations	Tissues	Encephaloid	Common vascular sarcoma Mammary sarcomata	Spongy, or ossiverous tumor. <i>Ruysch.</i> Strumafungosa [testis]. <i>Callison.</i> Spongoid inflammation. <i>Burns.</i> Milt-like tumor. <i>Munro.</i> Medullary sarcoma. <i>Abernethy.</i> Cerebriform disease, or cancer. <i>Laennec.</i>
				Solanoid. <i>Recamier, Zang</i> Nephroid. <i>Idem</i> Napiiform. <i>Idem</i> Carcinoma fasciculatum vel hyalinum. <i>Mueller</i> Fungus hæmatodes. <i>Hey</i> Hæmatodes cancer. <i>Auct Gall.</i>	
				Pancreatic Sarcoma. <i>Abernethy</i> Napiiform. } <i>Recamier</i> Chondroid. } Cardaceous tissue. <i>Auct. Gall.</i> Carcinomareticulare. <i>Mueller</i>	
			Colloid	Pultaceous cancer. } Pearly alveolar cancer. } <i>Cruveilhier</i>	Pulpy testicle. <i>Baillie.</i> Carcinus spongiosus. <i>Good.</i> Carcinoma spongiosum. <i>Young.</i> Fungoid disease. <i>A. Cooper, Hodgkin.</i> Medullary fungus. <i>Maunoir, Chelius.</i> Acute fungous tumor. <i>C. Bell.</i> Medullary cancer. <i>Travers.</i> Cephaloma. <i>Hooper, Carswell.</i> Carcinoma medullare. <i>Mueller.</i> Soft cancer. <i>Auct. Var.</i> Carcinomatous sarcoma. <i>Abernethy.</i> Carcinoma scirrhusum. <i>Young.</i> Scirrhus cancer. <i>Travers.</i> Scirrhus. <i>Carswell.</i> Carcinoma simplex vel fibrosum. <i>Mueller.</i> Stone cancer. <i>Auct. Var.</i> Arcolar gelatiniform cancer. <i>Cruveilhier.</i> Carcinoma alveolare. <i>Mueller.</i> Gum cancer. <i>Hodgkin.</i>

From a table now before us the mean age of 1200 cancerous subjects at death was 59·4 years in the male sex, and 56·1 in the female.

It is, however, an undoubted fact that the different species of cancer are far from being equally common to all ages. Thus, scirrhus is the form that attacks the adult, while encephaloid is the form usually assumed by the morbid growth in young subjects; the colloid appears only to have been noticed in adult individuals.

The different species of this formidable disease evidently make their attack on the human frame at different

periods of life, no age, however, being free from it; the babe unborn, and the old man of three-score years and ten, being liable to become victims. *Billard** mentions a case in which scirrhus had taken place in the heart during intra-uterine life. *Dr. Walshe* has recorded two cases of meningeal encephaloid which existed at birth. *Mr. Travers* has figured a very remarkable case of encephaloid disease of the eye, observed by himself and *Sir Astley Cooper*. At birth, the eyeball was about the size of a large walnut.

* *Traité des Maladies des Enfants.*

M. Cruveilhier has, on the other hand, mentioned a case in which uterine cancer commenced at the very advanced age of 84.

We may remark, also, that the three varieties of carcinoma, viz. the encephaloid, scirrhus, and colloid, have some points of distinction by which each may be easily known, viz. colour, shape, size, microscopical constituents, supply of vessels, situation, and the age at which the patient is attacked by them. To examine these separately would take much time and space; we must therefore hasten, lastly, very briefly to describe the case in which the eye was successfully extirpated in a boy of nine years old. But first it may be added, that Mr. Tyrrell observes, "that he is compelled, at present, to place together that which is usually considered as a scrofulous affection of the retina, and that which proceeds to the development of true fungus hæmatodes, from inability to point out any signs by which the two diseases can be distinguished in the early stages; and also from the conviction that the two are sometimes similar in origin, and that that which is at first simple may subsequently become malignant.

Case of William Bartrup, æt. 9.

April, 1841.—The mother brought this boy, then about seven years of age, to my house, for an affection of the eye, which had been coming on for some years. The boy presented a very remarkable appearance. The eye-lashes of the left eye were gone, and the lower lid partially everted; the globe of the eye was much increased in size, and the vitreous body was turbid and of a dirty brown colour. On a more minute examination the pupil was found dilated; the iris dull, discoloured, and pushed forwards, and the chambers for the aqueous fluid in part destroyed. The vessels of the conjunctiva and sclerotica contained red blood; and during the occurrence of the changes above mentioned considerable inflammation must have existed. There was also profuse lachrymation, some pain, and a great disinclination to turn the eye towards the light. The globe was tender and tense to the feel, and severe ocular and circumorbital pains were complained of. The palpebræ were tumid, and very red, and the superficial

veins much enlarged, and fully distended with blood of a dark colour.

The mother told me, that some months before she had remarked that the pupil appeared to have "a yellow cast (appearance), but the lad did not suffer any pain at first." I learnt, also, that this yellow tinge soon increased, at first very slowly, then more quickly, "and the eye began to be bloodshot." The child appeared uneasy; a chymist was consulted, and some powders given, and leeches applied to the affected organ. "But they did no good," and, continued the mother, "the more he took the worse he became; so we gave up doctoring till he got so bad we were obliged to bring him to you."

The poor little fellow was much depressed, had a distressed look, and seemed to suffer a good deal of local pain: the cornea was clouded, and only a confused mass could be seen beneath, all distinction of lens or iris being quite destroyed.

The secretions generally were imperfectly rendered, and the abdomen a good deal enlarged: a dose of calomel and rhubarb was therefore ordered at bed-time, and a dose of the compound decoction of aloes in cinnamon-water the following morning. This was repeated two or three times with advantage. In a week the child appeared better, and much of the irritation already mentioned was removed. A mild mercurial plan of treatment was now commenced, and steadily followed for more than six months, during which period every possible attention was paid to the diet of the child. The form in which the mercury was given was the Hydr. c. cretâ, with the Pulv. Cinnam. Co., so as gently to keep the little patient under its influence, the dose being diminished and increased according to circumstances. After taking this medicine for about four months some slight improvement was evident, and at the end of six months the diseased mass gradually began to subside. During this treatment the boy had improved in his general health, and was quite robust; much increased in stature and in bulk.

I now lost sight of my patient, and saw no more of him for twelve months, when he was again brought to me, the disease having made considerable advances. The child had, meantime

been under the care of a Quack, y'clept a *water doctor*.

I saw this poor little fellow now and then up to the month of October in the last year, at which time the mercury, which hitherto had possessed the power of arresting the disease, appeared quite inert. The eye-ball increased daily in size. The boy complained of no pain; and it would appear that the suffering is greatest whilst the diseased growth is confined by the unyielding and firm sclerotic tunic, if we may form an opinion from the relief obtained when this portion of the eye gives way.

The removal of the organ now appeared the only chance of affording relief, or rather of saving the poor boy's life; although, at the time, I feared that this would afford but little chance.

I was well aware that the result of the removal of the diseased organ had been very unsatisfactory, but still I thought, in this case, I was bound to propose it to his parents; and, with their consent, the eye-ball was removed in the usual manner.

It is needless to describe the steps of the operation: I had the valuable assistance of my friend Mr. George Chapman. The diseased mass was removed with a plain straight knife, some little difficulty being experienced, from the very great softness of the globe. Various instruments are spoken of as required; curved knives and scissors, hooks, blunt and sharp, &c. &c. &c.; but I have long been of opinion that the more we simplify our operations, and the less we torture the patient with dressing, the better. The boy, in this case, got well over the operation, and is now quite recovered. The other eye is much improved, and the mother told me, a few days ago, that he was "in the best of health."

We have the valuable authority of Mr. Tyrrell for stating, that in many cases, in children, the disease has subsided, and the globe become atrophied, under steady and long-continued mercurial treatment. It therefore behoves us to endeavour, by every means in our power, to produce this effect, by the plan already pointed out, before we propose an operation which, I am fully satisfied, in the great majority of cases, will fail after a long-continued course

of mercury has been tried without success.

Grove Street, East Retford,
Feb. 15th, 1843.

POTATOES A PREVENTIVE AND CURE FOR SCURVY.

To the Editor of the Medical Gazette.

SIR,

THE letter of Dr. Baly, contained in a late number of your excellent *GAZETTE*, has recalled to my mind a memorandum taken of a conversation in which I joined, on the subject of scurvy, with a highly intelligent medical gentleman, then attached to the "Hôpital de la Charité," in Paris, and as far back as the month of September 1834, when I was last in that capital. This gentleman, whose name, I much regret to say, has now entirely escaped me (having never since had the pleasure of meeting him), had previously served as a medical officer in the French navy, and had evidently given great attention to the nature and treatment of the "*Purpura nautica*." I well recollect feeling surprised when he assured me that, during several long sea-voyages, he had amply tested the great efficacy of *sound and fresh potatoes* in the prevention and cure of scorbutic disease amongst the seamen. He recommended the administration of the vegetable several times a day, in its raw state, but scraped sufficiently fine to make it digestible, and had proved it to be thus a most valuable remedy in the way of diet: the more so since it is easily kept, and very generally obtainable where other vegetables in a fresh and wholesome state cannot be procured.

Since the knowledge of this fact in the navy, and among our professional brethren serving therein, may prove a matter of much importance in securing the health of British marines, and in totally banishing from the service all the phenomena and exhausting symptoms characteristic of sea scurvy, your publication of this note in your widely circulating periodical will much oblige,

SIR,

Your obedient servant,
FRAS. PEPPERCORNE,

Delahoye Street, Storey's Gate, M.R.C.S.
Westminster, March 1, 1843.

ANALYSES AND NOTICES OF BOOKS.

“L'Auteur se tue à allonger ce que le lecteur se tue à abréger.”—D'ALEMBERT.

A System of Clinical Medicine. By ROBERT GRAVES, M.D. M.R.I.A., one of the Physicians of the Meath Hospital and County of Dublin Infirmary, &c. &c. &c. Dublin, 1843.

To the readers of the MEDICAL GAZETTE the name of Dr. Graves is familiar; for numerous and valuable have been his contributions to its pages. But this very circumstance, while it has added to the interest of our journal, has the disadvantage, when we come forward as reviewers, that the sense of obligation tends to rob us of our impartiality. Let our professional brethren, then, not trust to our report, but procure the work and judge for themselves.

Dr. Graves has now for many years been engaged in delivering clinical lectures at the Meath and Sir Patrick Dun's Hospitals, and his opinions have become widely circulated not only through the medium of his pupils but in consequence of numerous papers having appeared in some of the principal journals both of this country and America. One of the great peculiarities of the lectures is that they are strictly *clinical*, and bear internal evidence of being dictated by actual observation and experience. The lectures on Fever will be found particularly valuable and elaborate, as are those likewise on Syphilis and Mercury.

In a second part the volume contains a collection of very valuable papers published at various times in the Dublin Medical Journal, and embracing a variety of interesting and important subjects. Many of these we noticed at the time of their appearance, and our object at present is not to republish any of Dr. Graves's papers, but simply to recommend the volume to the attention of our readers.

Galen on the Hand. 8vo. p. 44*.

WE are glad to see this translation of so celebrated an essay, and we hope

that the author will continue his useful labours. We would earnestly recommend him, however, not to translate quite so literally, as many of his sentences are very stiff English, and others not English at all. The following extracts will give some notion of the manner both of Galen and his translator:—

“Man is the wisest of all animals, and hands are proper for so wise an animal. Not because he has a hand is he the wisest animal, as Anaxagoras said; but because he is the wisest animal he has a hand, as most truly Aristotle says. For the hands instruct not man in arts, but reason. The hands are organs, as the lyre to the musician, or the forceps to the artist. But the lyre does not teach music, nor the forceps arts, but there is an artificer for each, who is endowed with reason, but he could not work without instruments” (p. 7.)

“Therefore, let us begin with the words of Hippocrates, as if the voice of a god: for in the passage in which he demonstrates the use of the nails, where he shows how large it was suitable for them to be; in that very place, likewise, he equally demonstrates in these words, the reason why the hand has been divided into fingers, and why the thumb is placed in opposition to the four fingers. ‘The faultless construction, and the excellent disposition of the fingers, (which he calls *euphûia*), is, that that finger should be long which is in the middle, and that the thumb be set in opposition to the index finger. For the division of the fingers was made, that they might be separated as far as possible from each other, which arrangement is altogether the most useful; therefore, he suitably observes, that when any property is present in organs, on account of which they have been formed, that a construction of this kind is by far the most suitable; certainly, according to which construction the thumb has been placed in opposition to the fingers. But if the hand had only been thus divided, notwithstanding, the thumb would not have been very far distant from the fingers, it certainly would not have been opposed in contrary position.’” (pp. 19—20.)

* Our copy has no title-page.

Ueber die Anhängigkeit der physischen Populationskräfte von den einfachsten Grundstoffen der Natur, mit specieller Anwendung auf die Bevölkerungs-Statistik von Belgien. Von Dr. FERDINAND GOBBI. Leipsic und Paris. 1842.—*On the Dependence of the Physical Powers of Population upon the simplest Elements of Nature, with special application to the Statistics of the Population of Belgium.* By Dr. FERDINAND GOBBI. Leipsic and Paris. 1842. 4to. pp. 300, with plates and tables.

THIS handsome volume does great credit to its ingenious author; and those whose destiny allows them leisure for such physical and philosophical inquiries will be gratified by the German industry of Dr. Gobbi. The plates represent the hydrography of Belgium, and the tables give very minute details relating to the same subject.

MEDICAL GAZETTE.

Friday, March 17, 1843.

“Licet omnibus, licet etiam mihi, dignitatem Artis Medice tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso.”

CICERO.

THE NEW POOR-LAW UNVEILED.

WHEN perusing the accounts of war, pestilence, and famine, emblazoned on the pages of history, the hasty reader is apt to wonder that man and his works have not long since been annihilated. Since Germany during the thirty years' war was ravaged by hostile armies in every direction from the Rhine to the Elbe, from the Elbe to the Danube, how came it, he might ask, that the country was not reduced to a wilderness? The answer is, that complete extermination whether of things or of theories is not so easy as it is sometimes imagined. The French convention decreed the utter destruction of Lyons; yet Lyons survives to this day, with a population (*fides si*

danda Butlero) of 200,000 souls. Spots of verdure escape the locust—epidemics rarely depopulate a country—opinions flourish and are propagated in spite of penalties and dungeons; and codes, however stringent, do not sweep away the customs of a community. In the moral as in the material world there is an innate resiliency against superincumbent pressure; so that, after a thousand convulsions, its prospects shine out more brilliant than ever—like a landscape after a summer storm.

These considerations may help to explain why the New Poor-Law has done less mischief in nine years' grinding sway than some apprehended. In the first place, some favoured spots (Gilbert Unions, for example) have altogether escaped the withering Simoom, and remain Oases in the desert. But secondly, and chiefly, the principles of the new law have not been carried out to their full extent. It has been the fortunate fate of many penal statutes to be but feebly executed; and when we look at the avowed motives of the original contrivers of this law, and their accomplices, we cannot but be thankful that their power has proved so unproportioned to their will. The object of the economists was declared frankly enough a dozen years ago. It was simply to abolish by degrees *all* relief of the poor. For such was the pitch to which they carried their perverted enthusiasm, that they expected to see the time when benefit-clubs and insurance-offices would have swallowed up all other modes of providing for the indigent. In the palmy days of Malthusianism, private charity was stigmatized in the same terms as public relief, as being equally destructive of the independence of the labouring classes. In spite of the undeviating testimony of history and common sense, it was expected that the poor

would "cease out of the land;" and the engine for this miraculous change was asserted to be, the most rigid abstinence from charity on the part of the rich. The economists were too blear-eyed to see that a state with a liberal poor-law, is, in reality, an insurance society on the most magnificent scale, where the labourer, not half paid during his years of toil, lays up in the treasury of the public his unrecompensed exertions, in case he survives to claim their reward. Thus the plantains, red herrings, and Osnaburgh trowsers with which the slave-owner furnished the instruments of his wealth during their years of labour, were never supposed to exempt him from the duty of maintaining them when labour became impossible. The soldier and sailor see Chelsea and Greenwich through the long vista of time; so that the land and fund-holder, the ship and mill-owner, need not bemoan themselves so piteously if they must succour the old age of men without whose youth their wealth would have existed only on paper.

This attempt to effect a *euthanasia* of poverty, by not listening to its cries, and to destroy all sympathy with its miseries by studiously confounding the indigent with the criminal, has been now pursued for so many years that it is almost needless to prove the fact formally. Yet as this is sometimes conveniently forgotten, and as certain amateurs of the new law affect to believe that it was enacted *in favour* of the poor, it may be well to refresh their memories; so we will give them an extract from the index to the Assistant-Commissioners' Reports, as quoted in a late debate.

"*Paupers*.—Generally worthless and profligate, mostly made so by improvidence and vice. The chief receivers of donations from charitable institutions and charitable ladies, on whom they impose.

"Much better off than soldiers.

"Generally made so by vicious habits, and not by unavoidable causes.

"Made by lying-in hospitals, soup-kitchens, blanket societies, and permanent charities. Disimprove rapidly both in skill and morals. Know accurately the allowance of food in each workhouse and each prison within their district, and try to enter where the largest and best is given.

"In workhouses fare luxuriously compared with the labourers of Ireland or Scotland*."

An index, like the *Tatler's*, says Leigh Hunt, often gives "us a taste of the quintessence of his humour;" and it must be confessed that this index is insurpassably faithful to the spirit of the report which it epitomises. The extract must have been prepared *in vacuo* , so inimitably does it preserve the mawkish flavour and intense bitterness of the original substance.

The farther we go back in this strange eventful history, the more plainly do the Commissioners and their understrappers speak out. Hypocrisy, quoth Rochefoucauld, is the homage which vice pays to virtue; and though English philanthropy could not teach the economists virtue, it has compelled them to throw a veil over their worst projects. Every now and then, indeed, like the knight's visor in a German tale, which falls back and discloses the grinning skull beneath, the veil is thrown aside, and naked starvation reappears to the affrighted spectator. Still, on the whole, many unwilling sacrifices have been made to good feeling; for with a press to publish and comment, no Parliamentary majorities are sufficiently large to stifle the voices of humanity and reason. The farther we go back, therefore, the more truly we see the poor-law in all its original brightness, with its sharp edge as yet unblunted by debate or leader, calm argument, or indignant remonstrance.

* *Times*, March 7, 1843.

"Had you seen these roads before they were made,
You would lift up your hands, and bless
Marshal Wade."

Now imagine, O reader! that you could see the New Poor-Law "before it was made"—in its state of pre-existence—a mere embryo, as yet but a candidate for birth,—you too would lift up your hands, though we do not think that *blessing* would be precisely the natural accompaniment of the gesture. This unborn monster must have been a singular spectacle, you will say. A sort of ratio holds good between the seen and the hidden. If Curio on the hustings hints of treating, how openly will he profess bribery in his committee-room! If Aphroditus is so free at dinner, how coarse he must be when the ladies have withdrawn! If the Poor-Law Bill is so rigorous, what must have been the dim visions of unsparing severity, the ecstatic hope of an utter abnegation of charity, floating along the imagination of its rapt concoctors! How must they have chuckled over the anticipation of white bread slyly metamorphosed into brown, and this again fading into oatmeal and potatoes, until the poor, like the mare in the story, were gradually taught to live upon nothing!

These schemes are not of our invention; they were the waking dreams of those who plotted the new law, and have been lately laid before the House of Commons by Mr. Walter. The paper from which he read the house some extracts on the 23d ult., was a report furnished to Lord Grey's government by the commissioners on whose labours the new law was founded. Not more than twenty copies of this candid document were printed. One of them, by the death of its possessor, fell into the hands of Mr. Walter, among whose papers it lay unnoticed, and unread, till a recent period. But murder will out, and it was not the fate

of this remarkable declaration of war against the poor to remain for ever buried in a portfolio. This precious document recommends:

"That at any time after the passing of this act, the Board of Control shall have power, by an order, with such exceptions as shall be thought necessary, to disallow the continuance of relief to the indigent, the aged, and the impotent, in any other mode than in a work-house, regulated in such manner as by the aforesaid Board of Control shall be determined.

The power of the Commissioners would be to reduce allowances, but not to enlarge them. After this has been accomplished, orders may be sent forth directing that after such a day all outdoor relief should be given partly in kind; that after such another period, it should be gradually diminished in quantity, until that mode of relief was extinguished. From the first the relief should be altered in quality, coarse brown bread being substituted for fine white; and, concurrently with these measures as to the out-door poor, a gradual reduction should be made in the diet of the in-door poor, and strict regulations enforced."

Nor is this all:

"As one barrier to the increase of expenditure in the detailed management, the Commissioners should be empowered to fix a maximum of the consumption per head within the work-house, leaving to the local officers the liberty of reducing it below the maximum, if they could safely do so."*

Quere, the meaning of *safely* in this passage? Is rioting or diarrhœa the danger apprehended by the Commissioners? In truth, the master of a workhouse must have a fine tact, both social and medical, to pare another slice from the branny loaf, or subtract another spoonful from the attenuated gruel, and with a diet-table on the limits of starvation, yet keep his meagre flock in a presentable state!

Every one must confess that this report is the most curious exposure of the

* Times, Feb. 24th, 1843.

real, unvarnished meaning of a public measure that has taken place in our time. All comment on it is quite superfluous; but it would be doing service to the good cause to reprint it by the myriad, and circulate it from one end of the island to the other.

A HELP TO MEDICAL WRITERS.

IT is an old and a true saying, *Non omnia possumus omnes*. The industry which collects facts, and the genius which generalizes them, are not always combined in the same person; though the hosts of literature, like a well-ordered army, require their pioneers and sappers as well as their riflemen and dragoons. In our own profession, a few, but only a few, have wielded the pen and the lancet with equal dexterity; and while a Heberden or a Gooch occurs once in fifty years, we daily see doctors, the delivery of whose thoughts is prevented by a kind of literary *dystocia*. Hence it often happens that the attention of the medical reviewer is drawn from his author's thoughts to the language in which they are clothed; and, as in the good old times, an ill-dressed man was sternly repulsed from the Opera House, without inquiry into his personal merits; so an author whose opinions are travestied in a slip-slop dialect is rejected without pity. "Get your book translated into English," says the reviewer, "and we will then consider its merits."

The advantage of literary assistance in such instances as these is too obvious to be insisted on. But it will be objected that in many aggravated cases the disease is more deeply seated, and that the author writes unintelligibly, because he thinks confusedly. Our love of truth obliges us to confess that this is too often the case; yet even this evil is not beyond the reach of art: "there is a remedy," says Sancho, "for every thing but death." A good critic will not confine his corrections to simple matters of grammar, but will extend them to the substance of the work; and as the sculptor has been said to form his statue by merely disencumbering it of the marble which surrounds it in the block, so the friendly Aristarchus will bring thoughts into the light of day from under the mass of verbiage by

which they were stifled. We will now just mention where this assistance is to be procured. Mr. Francis Barham, whose profound knowledge of literature has long been the admiration of his friends, has established a Literary Agency Office, at 6, Warwick Court, Gray's Inn, where the labour of correction, besides a host of kindred services, will be performed for the anxious author. Should medical books still continue to come out in their present unseemly state, the candid critic will be apt to inquire "Why was not the MS. taken to Warwick Court?"

M'NAUGHTEN'S TRIAL.

(From a Correspondent.)

THE recent trial of M'Naughten, for the murder of Mr. Drummond, is one of the most important, of a similar nature, which has ever occupied the attention of an English court of justice; because the question mainly turned upon the degree of insanity which renders a man irresponsible for his criminal acts. We presume that few will doubt that M'Naughten's case was a very marked one of monomania. The delusion, that persecutors haunted him wherever he went; that the faces of his fellow-townsmen, the chief conspirators against him, were made to appear before him at Boulogne and elsewhere; that they annoyed him by significant nods and gestures, looked at him with contemptuous jesting sneers, and pointed at him as he walked. Again, his roving from place to place to get tid of them, but still obtaining no rest; his imagining that advertisements in the *Glasgow Herald* and in the *Times* referred to him, and pointed him out as one guilty of robberies and unnatural crimes; the dilated pupil, the wildness of the eye, the flushed face, the violence of manner whenever the subject of his delusion was referred to, his sleepless nights, were all proofs of existing disease. Nor was the plea of insanity an afterthought to save him from the just punishment which would have awaited him had he been of sound mind. We understand, from good authority, that, had it been necessary, the first appearance of disordered intellect might have been traced as far back as nine years,

when he slowly recovered from fever of a low typhoid character at Glasgow; that the disease, at first but slight and with intermissions, might have been shown to have advanced by slow degrees till it became remittent, *i. e.* that the delusion did not haunt him at all times with the same intensity, but that latterly it became continued, when imagination having subdued attention, and volition ruled supreme in his mind. Nor could a physical cause alone have been assigned to the malady: his mind, oppressed by incessant labour by day, was not relaxed by night; new toils awaited him when he retired to his solitary room; book after book was brooded over, till reason tottered. When we consider the length of time which has elapsed since the first symptoms of mental disease showed themselves, what are we to think of those who allowed such a man to be at large? Ten months have passed since he wrote to Mr. Johnstone; eight months since his interviews with Sir J. Campbell, Sheriff Bell, and Mr. Turner; eighteen months since he applied to Wilson, the Commissioner of Police, to protect him from his enemies, to avoid whom he had passed a whole night in the fields.

As regards the degree of insanity which, in the eye of the law, renders a man irresponsible, we have to consider that not every one labouring under partial madness is exempt from punishment; it must be shown that the criminal is so far insane that he cannot distinguish between good and evil, right and wrong. The essence of crime consists in the intention of the man who commits it. Idiots and fatuous persons, therefore, having properly no will, are not responsible for their acts; but it does not therefore follow that those labouring under partial madness have lost all self-control—are utterly unconscious of the existence of those sacred barriers which stand conspicuous along the frontiers which divide moral good and evil. A lunatic may enjoy lucid intervals—this is one example of partial madness, and he is properly held responsible for every act committed during such interval. Another example is that of the monomaniac, who is capable of reasoning correctly upon every subject unconnected with his delusion. This is the species of insanity in the case before us. To exempt a man from punishment who

labours under such form of madness as this, it must be proved that the crime is the offspring of the delusion. This was the ground which Lord Erskine took in his celebrated defence of Hatfield; it was the ground which Mr. Cockburn took in the present case. We were sorry to find that the Solicitor-General referred to the cases of Bowler and Bellingham in the late trial, because it made this impression on the minds of many, that if they were executed, M'Naughten ought also to be executed. But the "barbarity" (to use the expression of a learned judge) which condemned the former, who was afflicted with the worst species of madness, *viz.* that complicated with epilepsy, and the indecent zeal which hurried Bellingham to the scaffold, cannot be too much reprobated. Was, then, the crime of M'Naughten the result of delusion? Was he so insane that he did not know right from wrong when he fired the pistol at Mr. Drummond? M'Naughten imagined that his persecutors were destroying him by slow poison; that they had caused him to be affected with phthisis, of which complaint he fancied he should die before night. Eye for eye, tooth for tooth, murder for murder, was his argument. "I did no wrong; I would have shot Sheriff Bell, the cause of all my misery, as he sat in his chair. I went several times to the Court House for the express purpose, but, coward! he absented himself. I am not mad; I would do the same to-morrow, were I released from confinement." Such was his emphatic language.

There is no doubt as to who the real object of the attack was, and this threw some little difficulty in the way of the defence; but when it was considered that no doubt whatever existed as to the state of the unsoundness of his mind, both prior to and during his incarceration, it led to the conclusion that he was also insane when he committed the act; and that he was so insane as not to be amenable to the law was made evident from the further proof that he had no accomplices of his guilt; that he was no half-mad man, urged on by wicked persons for their own bad purposes; that he made no attempt to escape after committing the crime, the struggle with the policeman being, not to get away, but to fire the other pistol, that he might make sure

of his victim, impelled by the insane notion that one of his persecutors must fall a sacrifice in order to free him from persecution. The first words he spoke after firing shewed that the delusion was uppermost in his mind. "He shall destroy my peace of mind no longer." This, coupled with his declaration before the magistrates at Bow Street, his former statements to the authorities at Glasgow, and his repetition of the same ideas, nearly in the same words, during his examination by eight medical men in Newgate, could leave no doubt in the breast of any reasonable man that he was of unsound mind, and did not know right from wrong at the time he murdered his unfortunate and lamented victim.

CASE OF BRIGHT'S DISEASE,

WITH POLYPOUS CONCRETIONS IN THE RIGHT AURICLE, AND EXTENSIVE ADHESIONS OF THE PLEURA ON THE LEFT SIDE OF THE CHEST.

BY JOHN PERCY,

Physician to the Queen's Hospital, Birmingham.

(For the *London Medical Gazette*.)

BENEDICTUS BRAGG, admitted Oct. 27th, 1842, into the Queen's Hospital, æt. 17, and in appearance not older than 12. His health has always been delicate, and he has had several severe illnesses, of which the principal were small-pox at 3 or 4 years of age, typhus fever at 7 or 8, and lastly, purpura, which lasted for a considerable time, and since which he has never been well. His aspect is truly cachectic, and his countenance dejected and leuco-phlegmatic. His body and lower extremities are now affected with psoriasis guttata. Of late, he has had a scanty allowance of food. He complains chiefly of pain in the præcordial region, of occasional cough without expectoration, of dyspnœa, and palpitation excited by exertion, of thirst, headache, increasing debility, and great dejection of spirits. His appetite still continues pretty good. His face and eyelids and legs were œdematous. The left side of the chest is much less inflated on inspiration than the right, and, measured in the usual way, is an inch and a half less than the right. There is also on this side, anteriorly and posteriorly, general dullness on percussion, and very feeble respiratory murmur, which, in the lower parts, I cannot detect. Absence of resonance. The heart's action is extremely rapid; both sounds are heard, and are not attended with bruit. Impulse a little internal to left mam-

mula, and stronger than natural. Pain of a cutting character, excited by deep inspiration or coughing, and referred to the left side of the chest, near the mammula. The cough and pain of side commenced three months ago. Pulse rapid, small, regular, and moderately compressible. Tongue pale and moist; bowels moved yesterday. The urine contains albumen. During the progress of the case it was repeatedly examined, and the results will be found in the sequel.

I prescribed a mixture containing Tincture of Squills and Hemlock, Nitric Æther, and Infusion of Calumba, and a powder of three grains of mercury and chalk, with five of rhubarb, to be taken every night. A blister to be applied to the left side of the chest.

Nov. 9th.—Appears to be improving.

R Potassii Iodidi, ʒss; Potassæ Bicarbonatis, ʒj.; Inf. Calumbæ, fʒviij. Solve Capiat. fʒj. ter quotidie. Om. alia.

12th.—As before.

R Olei Crotonis Tigllii, fʒj.; Olei Olivæ, fʒiij. M. Ft. Linimentum, lateri sinistro applicand.

16th.—Puffiness of eyelids and face, especially early in the morning. Pulse 140, of the same character as previously. Headache.

R Sp. Ætheris Nitr. Sp. Juniperi. Co. aa. fʒii.; Tinct. Scillæ, fʒj.; Potassæ Acet. fʒʒj.; Infus. Scoparii. fʒviijss.; M. Ft. Mistura, et capiat. fʒj.; 4tis horis. Om. alia.

19th.—Pulse 150, small and weak; complaints of depression and debility; tongue red, and scarcely moist; soreness and tenderness of left side of chest posteriorly.

Parti Dol. applic. Vescicatorium.

22d.—Pulse small, feeble, 150; tongue rough, and presents several elevated glandular spots, redder at the tip than elsewhere; sleep disturbed; shooting pain across the loins; puffiness of eyelids; headache; appetite capricious. For several nights latterly he has been accustomed to rise from five or six times for the purpose of micturition; he passes a considerable quantity of dark-brown and turbid urine. Legs not œdematous; complains much of feeling low and faint, and "as though he had no life in him;" dulness and absence of respiratory murmur on the left side extend higher posteriorly than anteriorly; no resonance.

R Potassæ Acet. ʒiss.; Potassæ Nitratis, ʒij.; Potassæ Carbon. ʒj.; Sp. Alth. Nitr. fʒiij.; Tinct. Conii, fʒj.; Inf. Calumba, fʒviijss.; M. Ft. Mist. et Capiat. fʒ. quater indies.

P.r.n. Habeat. ex. aquâ Tinct. Valer.
Amon. gttss. xxx. Lateri Sinistro Applic.
Tinct. Iodinii. om alia.

Dec. 10th.—Rises four or five times in the night for the purpose of micturition; since yesterday morning has passed $6\frac{1}{2}$ lbs. of urine (avoirdupois) sp. gr. 1009°; natural in point of colour, and clearer than before; pallor of countenance, and puffiness of cheeks and eyelids; tinnitus and pain over the eye; dulness of left side of chest much diminished, except at lower part. In other respects he is as before.

Cont. Medic.

21st.—Much the same; still rises five or six times in the night to pass urine; headache and nausea. During my absence for a few days the following medicine had been prescribed.

℞ Disulph. Quina, gr. viij.; Ac. Sulph.
Dil. f̄j.; Inf. Cascarella, f̄zviij. M.;
Ft. mist. Capiat f̄zj. ter die.; Pulv.
Jalapaco. gr. x. alter. noct. Cont. med.

28th.—He vomits frequently both before and after taking food; headache; heavy and doughy expression of countenance; pulse as before; complains of sharp pain about the middle and anterior part of the left side of chest, slightly increased on deep inspiration.

℞ Infus. Cuspari, f̄ziv.; Sp. Ammon.
Arom. f̄zjss.; Mist. Camph. f̄ziv. M.;
Ft. mist. Capiat. f̄zj. ter quaterve indies.
Om. alia.

Jan. 7th.—Much as before; puffiness of face and eyelids, and œdema of legs; pale leaden dinginess, and remarkably heavy expression of countenance; not so much complaint of headache; does not rise now more than two or three times in course of the night to pass urine, which is darker coloured; appetite very bad; dyspnœa excited by motion.

From this time he continued to become gradually worse. He could not be induced to lie in bed, and at night he sat up, covered with a blanket, his body inclining forwards. Dyspnœa was extreme in the recumbent posture. He could scarcely retain anything on his stomach. He complained on being moved, or even touched, and appeared to suffer great agony. His legs were tense and œdematous. Epistaxis frequently occurred. He always referred his disease to the heart, and when asked, uniformly complained of pain in the precordial region. There was an evident peevishness of manner. Æther and morphia draughts were administered, and towards the last a blister was applied to the chest, with the view rather to satisfy the patient, than expectation of benefit. At his urgent request he was removed from the hospital to his own home. He died on the morning of the 25th of January. Fluid had escaped before death from his leg, and

the whole of the left extremity was in a gangrenous state, the surface presenting generally a deep red, and in many parts a dark brownish red appearance, especially towards the groin.

Section on the following day, at 1 p.m. Present Mr. Fulford, house-surgeon, and myself. Testes very imperfectly developed, and the pubes without a trace of hair.

Head not examined.

Chest.—Right lung everywhere free from adhesions, and perfectly healthy. Pleura of left lung everywhere firmly adherent. The lobes were united by recent and cellular adhesions, and in the situation of these adhesions specks of recent lymph were found. The union between the pleuro-pulmonalis and costalis was evidently of considerable standing, the false membrane being very firm and tenacious. The left lung, although contracted, was yet crepitant in every part. No effusion on either side. No tubercular matter. *Heart*.—Natural in point of size. No displacement. No effusion in the pericardium, which was free from adhesions. Left ventricle slightly hypertrophied. All the valves healthy. Slight contraction at the origin of the aorta, from the arch of which a small accessory artery was given off between the subclavian and common carotid. In the right auricle fibrinous concretions were found. One, of the size of a hazel-nut, was firm, dense, white, and rounded; it was solid throughout, and presented no trace of concentric structure or of organization; it was attached by a pedicle terminating in filaments, which interlaced with the muscular fibres of the auricle. It was situated just external to the orifice of the superior cava. There was also another similar yet smaller concretion. Filaments, and small pedicelled collections of dense fibrin, were interlaced with the muscular fibres of the appendix of the auricle. The right ventricle contained a layer of dense fibrin firmly adhering by filaments to the muscular substance, and to the chordæ tendinæ of the tricuspid valve. In both cavities of the right side of the heart were loose coagula of blood.

Abdomen.—Stomach and intestines were empty and contracted, and had a pale leaden hue. The kidneys presented the mottled appearance of confirmed granular degeneration. The other viscera were healthy. The bladder was distended with urine.

Urine.—I examined the urine passed in the night, at repeated intervals.

Nov. 18th.—Brown; frothy by agitation; turbid; filters clear; acid; sp. gr. 1021°; coagulates by boiling; coagulated matter not dissolved by nitric acid. I introduced the poles of one of Daniell's batteries into some of the urine which had been boiled and filtered, but in this case no further coagula-

tion was occasioned by the electric current. The urine passed the day before had the sp. gr. 1020°, and, after boiling, filtered milky.

Dec. 29th.—Very pale and nearly quite transparent, sp. gr. 1010°. Neutral. Turbid by heat, with separation of flocculi. 500 grains evaporated over steam bath left 9·3.

CLINICAL REPORT
OF THE
BRITISH DISPENSARY IN SYRIA.

To the Editor of the Medical Gazette.

SIR,

If I may judge from the interest now taken by the public in everything which relates to the progress of civilization, and the important changes continually going on in the East, the following communication will be received by your readers with very peculiar satisfaction. It is the first of the kind which has ever been transmitted from the Levant, and is an earnest, I hope, of "better things to come."

We have the testimony of the most experienced travellers, that for many generations, Syria and Palestine, like most other parts of the Ottoman Empire, have been left to the tender mercies of charm-venders, miracle-mongers, adventurers, fakirs, and sorcerers, always ready to impose upon the credulity of the simple; and, even in modern times, it is a well-known fact that, until lately, there has not been a single resident practitioner to be found (possessing the slightest claim to respectability) from Gaza to Antioch, from Hebron to the Kaoman, or from Beyrout to Damascus, Itours, and Itamah. But there is now an English physician at Jerusalem (Dr. Mc'Gowan, who resides with the Protestant Bishop); and in the summer of 1842, Dr. Kerns, the first agent of the "Syrian Medical Aid Association," also quitted the shores of England for the "land of the patriarchs." This gentleman entered upon his philanthropic mission with humble confidence of success, though with some misgivings concerning the distracted state of the country, and the deeply-rooted prejudices of the people, which, it was to be feared, might, at the outset, materially interrupt his labours. I am happy to say that he has succeeded beyond his most sanguine expectations, and this interesting and densely-populated territory is now beginning to appreciate the efforts which are making for its relief. No sooner was it announced that an English physician had been sent to establish a Dispensary at Beyrout, than numbers of the inhabitants flocked down to the coast, bringing with them the sick, the halt, and the blind, that he might "lay his hands on them,

and heal them." Knowing as I do the deplorable condition of Syria and Palestine—having myself witnessed the eagerness with which professional aid is sought by all classes, when once their confidence is established, and the unfeigned gratitude which the inhabitants evince for the most trifling alleviation of their sufferings—it is particularly gratifying to me to think that my own countrymen should be the first to associate in so good a cause, and that the pleasing office of declaring these good tidings has been entrusted to me by the Committee. Permit me, then, to lay before you the first report of our first medical agent in Syria; and when I tell you that Dr. Kerns has, by the blessing of Providence, himself relieved, in the course of three short months, under every disadvantage, 1297 of his suffering fellow-creatures, who were previously, in common with many thousands, without any resource to which they could apply, let the urgency be what it might, and that he has voluntarily contributed to their necessities in various other ways, I am certain you will take pleasure in making known what has been done, and what is still doing, for poor afflicted Syria. I ought not, in conscience, to extend these remarks, otherwise I might say much; but it does appear, from facts which have come under our notice, that the philanthropic exertions now making at Jerusalem and Beyrout are preeminently calculated to raise the British name in the estimation of the Syrian people. Experience teaches us that to heal the sick, to assuage pain, and to bind up the broken heart, under the benignant influence of pity, is the surest road to the affections of men; and there are few, I apprehend, so ruthless as to resist such an appeal to the better feelings of their nature. Having once tasted the sweets of sympathy—pure and disinterested friendship such as this—these hitherto deluded beings become devoted to their benefactors, and multitudes cry aloud for aid, which, alas! it is not in our power to give. They undertake long journeys to implore relief, and many faint and perish upon the road. In Damascus alone there is a population of 120,000 utterly destitute of medical advice. We do hope to be able, ere long, to establish an agent among them, and as soon as our funds will permit it is our intention to build an hospital at Beyrout. We feel that without such an asylum our best exertions will only ensure a limited degree of success, for many patients are brought from the remote and lofty regions of Lebanon, and their symptoms being aggravated by fatigue, they linger about the court-yards, among the ruins, and in tents, in order to be near the "Ih'akkim," whose efforts in their behalf, however, are often counteracted by numerous circumstances which are obviously beyond

his control, more particularly in cases of fever and diseases of the eyes. It is considered charitable in these countries to crowd round the sick, to cheer and amuse them; and where patients are huddled up together among heaps of filth and rubbish, there can be little attention paid to cleanliness, ventilation, or temperature—they can neither be defended from the sun by day, nor the dew by night. Moreover, a great many, finding themselves *relieved*, and anxious to get back to their families, retire to their distant homes too soon, and doubtless relapse in consequence. Thus it is hardly possible to arrive at accurate results, either in regard to deaths or cures. Any record upon the subject must, at present, be liable to objections, but we hail the document which we have received as a harbinger of much good, and every credit is due to Dr. Kerns for having accomplished so much in so short a time. Another important feature in the plan of the Association is to establish a medical school, that the natives may themselves be instructed in the "healing art." They display considerable abilities, which only want to be well directed. It may be proper to state that Dr. Kerns (who was selected out of 40 eligible candidates) is 38 years of age, married, and a gentleman of tried character and experience.—I remain, sir,

Your obedient servant,

WILLIAM HOLT YATES, M.D.

53, Woburn Place, Russell Square,
Feb. 14th, 1843.

P.S.—Since writing the above, intelligence has been received that Sir Moses Montefiore is about to establish a Dispensary at Jerusalem for three years, at his own cost, by which time it is expected there will be a complete hospital in successful operation. The Dispensary is to be managed by Dr. S. Frankel, a Prussian, and his services, like those of Dr. Kerns, are to be at the disposal of persons of every country and denominations; the doors will be open, without distinction, to all that suffer and apply for aid, whether Jew, Protestant, Roman Catholic, Greek, Maronite, Mussulman, or Druse.

Extract of a letter from Dr. Kerns to the Committee of the "Syrian Medical Aid Association," London.

"Gentlemen,—I send you herewith a report of the three months just ended. I could not, from several causes, commence my registry sooner. Since my last communication, this unhappy land has gained nothing in tranquillity, and what the ultimate result may be it is still impossible to conjecture. However, my Dispensary goes on smoothly and satisfactorily. Of course, in my professional vocation, I know no distinction of persons. At first, very few Turks or Mohammedans came to me—such was their bigotted hatred of the Christian name. But

I must not omit to mention that *now*, in applying for medical relief, religious prejudices do not appear to have much, if any, influence. My patients consist not only of every Christian sect in the country, but also of Mohammedans, Jews, and the Druses of Lebanon; and as a pleasing evidence that the people appreciate the advantages which British benevolence has placed within their reach, I may notice the fact that, even under the seclusion which custom has imposed upon the females of these countries, and the reluctance with which they approach strangers, among the applicants at the Dispensary we have had a larger proportion of females than males!

"(Signed) "THOMAS KERNS, M.D."

Beyrout, Dec. 8, 1842.

Report of the number of Patients relieved at the Dispensary of the "Syrian Medical Aid Association," recently established by the British at Beyrout.

	Sept.	Oct.	Nov.	Total
Ophthalmia . . .	67	130	56	353
Purulent Ophthalmia of Infants . . .				9
Entropium . . .	5	4	5	14
Ectropium . . .	1	3	1	5
Pterygium . . .				10
Amaraurosis . . .				4
Cataract . . .	1	6	5	12
Intermittent Fever.	58	30	22	110
Continued Fever .	14	13	32	59
Puerperal Fever. .				3
Rheumatism. . .	27	28	46	91
Bronchitis & Pneumonia . . .	18	13	36	67
Pulmonary Consumption . . .				4
Inflammation of the Throat . . .	1	2	2	5
Dyspepsia . . .	49	78	95	222
Disease of the Liver.	8	3	6	17
Dropsy . . .	6	4	4	14
Dysentery . . .	3	4	7	14
Diarrhoea . . .	4	2	2	8
Urinary Diseases .	8	9	5	22
Eruptions . . .	7	14	18	39
Worms . . .	14	11	12	37
Paralysis. . .				4
Spinal Disease . .				2
Deafness . . .	3	2	3	8
Ulcers . . .	16	25	47	88
Abscess . . .	2	6	8	16
Fungous Tumors .				3
Hernia . . .	1	1	4	6
Club Foot . . .				3
Cancer . . .				6
Patients not included in the above.				42
Total, 1297, i. e.	{ Males.....623 ? Females...674			

The mean Temperature of Beyrout.

	Morning.	Noon.	Evening.	Hottest day.	Difference.	
					Morning.	Morning & Evening.
April .						
May .						
June .	65	72	66	86	7	6
July .	71	77	72	89	6	5
August .	73	78	75	87	5	3
Sept. .	79	86	82	94	7	4
Oct. .	83	89	84	97	6	5
Nov. .	80	87	83	95	7	4
	79	84	81	91	5	3
	65	71	64	77	6	7

The mean temperature of Hamdoon, one of the higher villages of Mount Lebanon.

July .	72	75	73	78	3	2
August .	65	71	70	84	6	1
Sept. .	69	73	72	83	4	1
Oct. .	62	70	69	82	8	1

The record of April, May, and June, being previous to my arrival here, was furnished by a resident gentleman. That of Hamdoon was furnished by an American Missionary.

(Signed) THOMAS KERNS, M.D.

Remarks upon the above Report.

Ophthalmia.—Under this head are included every stage of the disease—inflammation of the conjunctiva, ulceration of the cornea, protrusion of the iris, specks, and staphyloma. Inflammation of the eye here, if improperly treated or neglected, sometimes runs its destructive course with great rapidity. I have seen protrusion of the iris in about five days from the attack; and partial opacity of the cornea is remarkably common. Active depletion, with mercurial purgatives, and the application of a solution of the nitrate of silver, I find the only effectual remedies. It is difficult to assign the chief cause of ophthalmia in this country; it attacks all classes and all ages. It has been ascribed to sleeping out in the open air, which the poorer classes are very fond of during the summer nights; but many cases have also come under my notice among those who never do so. Again, want of cleanliness has been thought a fruitful source of the disease; but numerous instances occur in individuals who are extremely clean and neat in their persons: neither can poverty nor privation be with propriety assigned as the cause: it is incorrect to draw such a conclusion, because a greater amount of disease is to be found among the poor: that class being the most numerous in every

country will always render this a natural result. If I were to name any one cause as being more deeply chargeable with this disease than another, I would say that it is the direct glare of the sun to which the eyes are subjected by the ordinary dress of this in common with other oriental countries, as it affords no shade to the eyes—such as the turban, tabousch, or Persian cap. The veil worn by the females, though covering the eyes, is scarcely less distressing, being closely applied to the face, and cannot render that soft shade to the eyes which European hats and bonnets afford*.

Pteridium.—This disease of the eye is very common.

Cataract.—I have operated on eight persons with various degrees of success: but such operations are performed under great disadvantages without an hospital.

Intermittent fever.—It is difficult to assign an evident cause for the prevalence of this complaint. In the neighbourhood of Beyrout, at least, where the land is parched with drought one half of the year, and where, at no period, marshes or stagnant pools are to be found to any extent, marsh miasma would seem to be out of the question; however, if we omit the association of *marsh*, which is but a casual circumstance, the theory of decomposed vegetable and animal matter will remain as probable as any other, and as applicable. These effluvia are often more offensive from the absence of water.† Intermittent fever is here found among all classes and ages: and frequently recurs several times when the patient is apparently quite well: and it hangs about him for eight or ten weeks together.

Continued fever is generally of the common inflammatory form. I have only met with two or three cases which assumed a typhoid character.

* There is much truth in these observations; but I think we may justly ascribe this "scourge of Oriental climates" to the sultry heat of the valleys, exposure to the mid-day sun, checked perspiration, caused by the heavy dew of the night, and other circumstances which, producing irregular determinations of blood, favour congestion of the liver and spleen; and this seems to be borne out by the fact, that persons of a bilious temperament, who have swarthy complexions, black eyes, and black hair, and generally relaxed bowels, suffer less from ophthalmia, but are the frequent subjects of dysentery and diarrhoea; whereas those of a sanguine temperament, who have light eyes and light hair, a deficiency of bile, and a clearer skin, often escape the latter, but are very prone to constipation and ophthalmia.

W. HOLT YATES, M.D.
† Having been myself a sufferer from this complaint at Beyrout, and witnessed its effects in others, I took some pains to investigate the subject. With your permission, therefore, I will avail myself of an early opportunity of sending you a few remarks on the climate of Syria as connected with the points referred to in this communication.

Rheumatism.—The prevalence of rheumatism manifestly arises from sleeping on the ground in the open air. I seldom find it in those who have not thus exposed themselves.

Pulmonary consumption, so far as I have been able to judge, is a rare disease. Bronchitis is the most frequent pulmonary complaint in Syria.

Urinary diseases.—These are chiefly chronic affections of the mucous membrane, and irritation arising from the habitual use of stimulants.

Ulcers.—These arise from trivial causes, and are generally most obstinate to heal.

Fungous tumours.—One of these occupied the entire place of the cornea, hung over the cheek, and presented a bleeding surface. I passed a hook through it, and removed it, together with a portion of the globe. It appeared to have originated in a thickened conjunctiva.

Club-foot.—I operated in two cases with success, which gave great pleasure to the country people who saw them.

N.B. Those diseases which might be influenced by season I have marked in months as they occurred, so that at the end of the year some useful calculations may be made on the subject.

THOMAS KERNS, M.D.

PORTUGUESE PRACTICE.

[Continued from page 608.]

Frequent and violent vomiting, supposed to depend on scirrhus of the pylorus, cured by extract of hemlock, and the endermic application of acetate of morphia. By Dr. LIMA LEITAO.

A widow, aged 50, of delicate frame, who had never menstruated regularly, and who had suffered much from dysuria and renal pains, for which warm baths had been employed, was attacked, in September 1838, with several fits of vomiting daily. She threw up all that she ate, and, at last, a frothy whitish water. When the author saw his patient, her complexion was muddy, and her skin dry; she was dispirited, very weak, and had but little sleep; the pulse was small, but not frequent, the tongue dry, and her thirst considerable. The abdomen was normal to the touch, with the exception of the epigastric region on the right side of the linea alba, close to the false ribs, where an induration was to be felt, as large as an orange, and painful on pressure. The induration seemed to be caused by an inflammatory swelling of the liver; while the vomiting depended on great irritability of the stomach, or disease of the pylorus. As the vomiting had not continued long, the author determined it to be a case of chronic gastritis,

complicated with inflammation of the liver. He accordingly prescribed a large number of leeches to the epigastrium, emollient poultices mixed with belladonna, emollient clysters, and saline aperients. This treatment was continued three or four days without advantage; and then, in order to combat directly the nervous element of the disease, he prescribed pills of lactucarium and saffron; and as these, too, were of no benefit, he gave pills containing one grain of opium for a dose. These somewhat diminished the sense of anxiety, and caused sleep; but the vomiting and other symptoms continued. Two other skilful physicians were now called into consultation. They were of opinion, that, besides the chronic gastritis, there was a scirrhus of the pylorus; and they advised the alternate use of opium, and small blisters to the pit of the stomach, and so on. This treatment likewise failed, and the patient grew visibly thinner. The author then recollecting Stoerkh's case, exhibited pills of the extract of hemlock, with a little chicken-broth for drink, senna clysters, and a large blister to the epigastrium, which was sprinkled with two grains of the acetate of morphia every twelve hours. By this treatment this dangerous attack went off, but the convalescence was long.

[On this the German translator observes, that the blister and morphia must have been the most effective parts of the treatment; for the hemlock was given in such small doses—only half a grain daily, at first, and afterwards three times a day—that it would be difficult to ascribe the remarkable effect produced to this remedy; particularly when one knows what enormous doses Stoerkh used and recommended to produce any important effect*.]

Case of acute pleuro-pneumonia, cured by large doses of kermes mineral, after other remedies had been given. By Sr. K. J. D. ALREN.

An infantry soldier, aged 31, had suffered in health from three years' imprisonment and ill-treatment by blows, through which he became affected with cough and pain in the chest, for which he had not used any remedies. He entered the hospital on the 22d of October, 1838, with all the signs of a violent affection of the lungs; and it appeared, from stethoscopic examination, that the right lung chiefly was diseased. He was twice bled to sixteen ounces, took an ounce of castor oil, an emollient decoction, and some broth. On the following day there was another bleeding, and sinapisms; and, afterwards, a blister between the shoulders,

* It is almost certain, however, that the extract is now much better prepared than in Stoerkh's days. John Hunter, in his Treatise on the Venereal Disease, speaks of doses which would now be preposterous.—TRANSLATOR'S NOTE.

and an opium pill in the evening. Until the 30th, all the symptoms had improved; the respiration was easy, the cough loose, and but little fever; still the right lung retained its crepitus. On the 31st, all the symptoms were much worse: there was great pain in the right part of the chest, sanguineous sputa, and oppression which during the night bordered on suffocation; the crepitus in the chest was very considerable; and the patient lay on his left side. He was now bled to ten ounces: twelve leeches were applied to the painful spot, with emollient poultices to the chest, and a dose of castor oil was given. On the 2d November the pain and oppression were less, but the expectoration was still sanguineous. Four cupping-glasses were now applied to the right shoulder, tartar emetic was rubbed into the chest, and a Burgundy pitch plaster, sprinkled with tartar emetic, was applied between the shoulders. On the 7th of November there were twelve dark-coloured sputa, which looked like pieces of chewed flesh, and were swimming in about a pound of frothy mucus; the epigastrium was somewhat sensitive, and twelve leeches were applied to it. On the next day the expectoration was not so blood-stained, and the crepitous rhonchus had diminished; nevertheless, twelve more leeches were applied to the right side of the chest.—Nov. 9th. The expectoration was now hardly streaked with blood. Twelve leeches were applied to the suffering side, an issue was made in the right arm, and a blister placed between the shoulders.—12th. No blood in the expectoration; respiratory murmur over the whole right side; the sweats, which had disappeared, returned. Pectoral juice was prescribed, with four grains of kermes mineral, an ounce of castor oil, and pills containing one-fourth of a grain of acetate of lead.—15th. The expectoration and cough were decreasing, and the sweats had ceased; the patient's appetite returned; and every symptom disappeared except the obscurity of the respiratory murmur in different parts of the right lung. The dose of kermes was increased to fifty grains daily; and suppuraton was kept up between the shoulders, on the chest, and on the arm.

[It is not stated, says the German translator, when the patient was discharged completely cured. In twenty days he took one ounce and twenty grains of kermes, without gastric symptoms; but whether this pneumonia can therefore be said to have been cured by the kermes is left by the translator to the judgment of the reader. At any rate, he says, a frightful quantity of blood was taken away from an already weakened patient; instead of which it would have been better to employ, in part, more powerful internal antiphlogistics.]

[To be continued.]

CASE OF TAPPING OF THE BRAIN.

A FEW mornings since I heard the question asked, "Is the operation for tapping the brain ever successful?" Now, as the following case bears materially on this point, I am induced to submit it to the public, in the ardent hope—nay, I would say more, the almost certain conviction, that if a similar treatment be adopted in these cases, many young lives might be saved. In an Essay read at the Dublin Medico-Chirurgical Society, a few years since, I cursorily noticed this case; since then, repeated post-mortem examinations have confirmed me in the propriety of the operation in certain cases. It comes in as a last resource, when all else fails. Though purgatives, blood-letting, and cold to the head, do not arrest the effusion (for it will continue, from deranged action in the vessels themselves), still they may suppress the inflammatory disposition of them, which conduces to that state. Now here, if the fluid is in large quantity, it will not be absorbed, but, by its pressure, act mechanically in augmenting the turgid condition of the vessels of the part, and thus tend towards the diseased action being continued, until it ultimately terminates in ramollissement. But this will not be so in the majority of cases if the fluid be removed, for it will be much easier to restore the healthy action of the vessels, vessels so peculiarly modified in their structure and anatomical arrangement.

That ramollissement does not come on till a later period than is generally supposed, I have verified by dissection. In eight cases that I have examined of acute hydrocephalus, where the head was unusually large, and where the children were carried off in a few days by infectious diseases, not in any of those cases was there softening or ramollissement of the structure of the brain, though the lateral ventricles were enormously distended with fluid.

There is no doubting the possibility of serous fluid being absorbed from the ventricles of the brain. We are warranted in this supposition, both by the analogy of other serous cavities and by what is actually observed to take place in the brain itself; but, where this fluid is in very large quantity, the *power of absorption is destroyed*; and the patient dies from the structure of the brain becoming secondarily involved. The following case will show the advantages of the operation in this state of things.

Maria Burns applied for advice at the South Infirmity, Cork. She stated having had three children, "two of whom died of water on the brain;" the third, she apprehended, was affected in a similar manner, and entreated that something would be done

that might afford any chance of relief. Upon examining the patient, a boy 16 months of age, his head was almost transparent, and presented, in different situations, patches where the ossific matter was not deposited, its place being supplied by the common integuments. The sutures were very considerably separated, being from half to three quarters of an inch asunder. The head measured in the fronto-occipital circumference thirteen inches and a half; from ear to ear, across the vertex, nine inches; round the chin and across the vertex nine inches three quarters; the pupils were greatly dilated, and insensible to the stimulus of light. Now and then the child would scream out in the most violent manner, being then immediately attacked with convulsions, which the mother said came on frequently for four days previous to her application for relief at the hospital. Here nothing could be expected from the ordinary methods of treatment; therefore, Dr. Woodroffe determined on drawing off the water.

The integuments having been divided with a lancet, a trochar was introduced about three quarters of an inch external to the mesial line, near the junction of the edge of the fontanelle with the margin of the parietal bone. The instrument being inclined a little inwards, in this manner it was directed into the lateral ventricle of the right side: no sooner was the stillet withdrawn than the fluid flowed out freely through the canula. The quantity drawn off amounted to eleven ounces. After the discharge of so large a quantity of fluid, the head lost its tension and globular form, and became so flaccid as to allow the remaining quantity of water to gravitate backwards, giving the head a very elongated appearance. To support the parts a double-headed roller was applied loosely, the edges of the incision being previously brought together with adhesive plaster. The child sunk very low immediately after the operation; however, after some time, the urgent symptoms were suppressed. From this period up to four weeks after, every thing was doing remarkably well; the head filled again; but not to one-half of its original size. The operation was again performed on the left side, in the same situation as on the right. The child began visibly to improve; no convulsions whatever occurred after the first operation; four weeks more elapsed, and the head was not near the size it presented before the second operation; so much was it lessened, that another operation was deferred for a future period. At this time ten weeks had elapsed; the child was free from convulsions; the eyes were quite sensible to light, and the little patient did not exhibit any lethargic symptoms. In four days after he began to get uneasy and restless; three more had not passed by when he was

seized with convulsions that terminated in death. I was immediately called to see the child; and having accused the mother of neglecting it in some way, she acknowledged to have given it wine regularly for five days before, stating, as her reason for doing so, "she thought it would hasten the cure, and not to do him any harm, he was so much better."

On examining the head after death, the different places where the ossific matter was wanting were filled up by a membrane which was almost converted into bone. The sutures were greatly closed in, being not more than the eighth of an inch apart. All the parts within the lateral ventricles appeared in a healthy state; there was no softening of the structure of the brain whatever; no over-gorged condition of the vessels, or increase in vascularity.

In this case I think there are some points particularly worthy of attention. First—from the time of the first operation until eleven weeks after, no convulsions ensued. Secondly—four weeks from the first operation the child was sensible to light; and lastly, the relaxed state of the integuments allowed the process of ossification to advance in a most remarkable degree. The treatment after the operation consisted chiefly in cold to the head, local blood-letting, purgatives of calomel and chalk.

There is no doubt in this case death was caused by the injudicious management of the mother; but, if the reader should continue sceptical as to the propriety of the operation, I would refer him to a case treated successfully by it, in the ninth volume of the *Medico-Chirurgical Transactions*.—*Mr. Butcher, in Dublin Journal.*

QUACKERY OF THE DAY.

To the Editor of the Medical Gazette.

SIR,

I lose no time in informing you that I have had a most interesting interview with M. Reynard, who arrived in London yesterday, and was so kind as to give me an early audience. The interview was indeed highly gratifying to me, as it enabled me fully to comprehend the merits of Professor Philippokett's system, and completely removed from my mind any little remains of scepticism which might still remain there. It was truly delightful to find, that the Professor's theory is extremely simple, and is based upon facts, which are universally recognized by all who are acquainted with the brilliant discoveries of the eminent continental anatomists and physiologists. The brain has been demonstrated by them to be composed of alternate strata, which are precisely analogous, or

rather identical, with the plates which compose the voltaic battery, the nerves being, of course, the conductors by which the electric circuit is formed. Now the grand discovery of the Professor is the mode by which this cerebral battery is to be exerted, and how, at the pleasure of the operator, the positive and negative, or, to speak more correctly, the polarized and the depolarized states, may be produced and transmitted to the various organs separately and individually. The Professor did me the honour to explain to me the whole affair, and exhibited to me his apparatus, which is equally remarkable for its simplicity and for its powerful effect. But it was with a strict injunction of secrecy; and this was done, not from the sordid wish to monopolise any pecuniary benefit which may be derived from the discovery, but because he has ample proof that it would be extremely dangerous to trust the process in any hands but those who are thoroughly skilled in the management of the apparatus. He related a case, in confirmation of this position, which occurred in the city only two days ago. A man of the name of Jeremiah Bouby, a weaver in Spitalfields, who had, for many years, maintained his family very comfortably by his earnings, was, unfortunately, induced to attend a meeting of the anti-corn-law league, and learning from one of the orators that his wages were too low, he refused to work until they should be raised. This, however, his master refused to do, and poor Jerry and his family were all starving for want of food, when an ignorant quack in his neighbourhood, who had, by some chance, got possession of the apparatus, but not knowing how to use it, applied it in the wrong direction, and, of course, produced the directly contrary effect to what was intended. Jerry's stomach was highly polarized, and thrown into a state of the most acute excitement, so that a degree of bulimia was necessarily induced of such extreme violence, that it was with the utmost difficulty, and only by the assistance of a policeman, who luckily was in the neighbourhood, that he was prevented from seizing one of his children and cutting him up into chops. He remained for some hours in this horrible state, when it was found absolutely necessary to convey him to a lunatic asylum, when I was informed it was proposed, as a means of at least temporary relief, to put him on the hydropathic plan, taking the precaution of having the abdomen well secured by strong bandages. M. Reynard informed me that two cases, very similar to that of Jerry's, occurred at Puffin-burg, where the Professor made known his discovery, so that he considers himself bound, by every motive of honour and philanthropy, to prevent his apparatus from being employed, except under his own immediate

inspection, or by those who have been instructed by himself. The sole management of the process in this country is, of course, entrusted to M. Reynard, and the office of introducing the patients to M. Reynard is, for the present, conferred on myself. It has frequently been observed in the progress of science that grand discoveries are contemporary, and so it has proved in the present instance. While Phillpockett was thus acquiring this wonderful power over the action of the stomach, Dr. Focks, Professor of Chemistry in the same University, has been applying his extraordinary talents to the analysis of some of the principal articles of food, and has been eminently successful in his results. He has already discovered the distinct existence of panine, the specific principle of bread, that in which its nutritive power resides, and which he finds, as might have been anticipated, to constitute only a small proportion of the whole mass: he has not yet quite ascertained the precise ratio, but he has found it to be more than 49 parts in 1000. He has also discovered vitaline and agnine, the specific principles of veal and lamb respectively, and he has made progress in the analysis of beef and mutton, but, in consequence of the more powerful attraction between their atoms, he has not yet been able to obtain bovine and ovine in their perfectly pure state.

Your intelligent readers will readily perceive the immense benefits that must be conferred on society by these grand discoveries, and the farther discoveries to which they cannot but lead. And I may here intimate to you, that the Professor has lately entered upon a train of experiments, still more curious and important than those on the stomach, in which, by the application of a modified apparatus to a certain organ of the body, he feels confident that he shall be able to produce an effectual remedy for the evils so strongly painted by Malthus and M'Culloch, and which have hitherto entirely baffled all our most eminent moralists and political economists. The most fruitful source of vice and misery will now be effectually nipped in the bud; but of this more hereafter.

I must now close this perhaps too long letter, by informing you that I have engaged spacious apartments, for the reception of those ladies and gentlemen who are desirous of seeing M. Reynard, at No. 1, Folly Lane, a situation which I have chosen as being more central than my former residence, and also, as being in the neighbourhood of some of the most distinguished inns of court.

I am, sir,

Your obedient servant,
TIMOTHY GOSLING.

N.B. The usual fee will be expected.

1, Folly Lane, March 7, 1843.

CASE OF DEMONOMANIA.

A WOMAN about five-and-twenty, of a strong constitution, and married to a weak and delicate man, became violently hysterical, and was subject to nocturnal visions of a kind most calculated to alarm her. She was fully convinced that a beggar whom she had repulsed one day, and who had threatened to bewitch her, had executed this disastrous project. She thought that she was possessed by the devil, who, according to her account, took various forms, and sometimes sang like a bird, at others uttered mournful sounds, and sometimes piercing cries which frightened her excessively. She remained for several months in her bed, uninfluenced by all the advice given her, and by all the consolations of friendship. The vicar of the place, an enlightened man of a mild and persuasive character, gained an ascendant over her mind, and succeeded in making her leave her bed, and in persuading her to resume her domestic occupations, and even to dig in the garden, and use out-of-door exercises extremely useful to her body; all followed by the best effects, and by a cure which lasted three years. But the good vicar now died, and was succeeded by an ex-monk, very superstitious, and of very limited capacity. He gave entire belief to the visions of the patient, did not doubt in the least but that she was possessed by the devil, continually repeated exorcisms, and kept her strictly shut up. The consequences of such absurd prejudices are not difficult to foresee.—*Pinel sur l'Aliénation Mentale.*

FREQUENCY OF SECOND ATTACKS OF SMALL-POX.

M. SERRES states, that, from the observation of 1500 cases of small-pox, he has arrived at the conclusion that secondary attacks of small-pox are as common after small-pox itself as after vaccination; that, in fact, vaccination has the simple effect of preventing a first attack of small-pox, being merely of the same efficacy in that respect as an attack of small-pox itself.—*Dublin Journal.*

INSPECTORSHIP OF PRISONS.

THE above appointment, vacant by the death of Dr. Shortt, has been conferred on J. G. Perry, Esq. Surgeon to the Foundling Hospital, and recently Secretary to the Royal Medical and Chirurgical Society.

BOOKS RECEIVED.

Views upon the Statics of the Human Chest, Animal Heat, and Determinations of Blood to the Head. By Julius Jeffreys, F.R.S., &c. &c.

Observations on an Act (5 and 6 Vict. c. 123), "For amending the Law relating to Private Lunatic Asylums in Ireland," &c. &c. By William Harty, M.D., Physician to the Prisons of Dublin, &c.

ROYAL COLLEGE OF SURGEONS.

LIST OF GENTLEMEN ADMITTED MEMBERS.

Friday, March 10, 1843.

P. Walsh.—G. W. Bagg.—R. Lee.—W. Mitchell.—W. B. Francis.—J. Arthur.—J. Ness.—J. O. Goodridge.—T. J. Austin.—F. P. Smith.

A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, March 4, 1843.

Small Pox	9
Measles	16
Scarlatina	29
Hooping Cough	39
Croup	12
Thrush	1
Diarrhoea	8
Dysentery	3
Cholera	0
Influenza	3
Typhus	58
Erysipelas	5
Syphilis	1
Hydrophobia	0
Diseases of the Brain, Nerves, and Senses ..	139
Diseases of the Lungs and other Organs of Respiration	344
Diseases of the Heart and Blood-vessels	29
Diseases of the Stomach, Liver, and other Organs of Digestion	61
Diseases of the Kidneys, &c.....	5
Childbed	11
Ovarian Dropsy	2
Disease of Uterus, &c.	1
Rheumatism	1
Diseases of Joints, &c.	4
Ulcer	2
Fistula	0
Diseases of Skin, &c.....	0
Diseases of Uncertain Seat	130
Old Age or Natural Decay	86
Deaths by Violence, Privation, or Intemperance	21
Causes not specified	1
Deaths from all Causes	1021

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude $51^{\circ} 37' 32''$ N. Longitude $0^{\circ} 3' 51''$ W. of Greenwich.

March 1843.

	Thermometer.	Barometer.
Wednesday 8	from 24 to 43	30.15 to 30.23
Thursday . 9	24 37	30.27 30.25
Friday . . 10	33 42	30.12 29.96
Saturday . 11	27 45	30.02 30.06
Sunday . . 12	36 50	30.87 29.66
Monday . . 13	36 54	29.66 29.58
Tuesday . 14	40 55	29.39 29.55

Wind, N.E. on the 8th and morning of the 9th: since S.W. Except the 8th, 12th, and morning of the 13th, generally overcast; rain on the evenings of the 13th and 14th.

Rain fallen, .2 of an inch.

CHARLES HENRY ADAMS.

WILSON & OGILVY, 57, Skinner Street, London.

THE LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, MARCH 24, 1843.

LECTURES

ON THE

THEORY AND PRACTICE OF MIDWIFERY,

*Delivered in the Theatre of St. George's
Hospital,*

BY ROBERT LEE, M.D. F.R.S.

LECTURE XX.

Diseases of Pregnant Women—(concluded).

A WOMAN, in the seventh month of pregnancy, had the feet, legs, and thighs covered with great purple clusters of dilated veins, which seemed ready to burst; the hæmorrhoidal veins were likewise swollen and painful. A profuse hæmorrhage took place from the uterus, and all the varicose veins suddenly disappeared, and they did not return, though she went nearly to the full period. This case proves that a varicose state of the veins of the lower extremities is not always produced by the mechanical pressure of the gravid uterus on the veins at the brim of the pelvis, but arises from overdistension of the vena cava and its branches, the iliac, femoral, and saphena veins. The vena cava does not enlarge during pregnancy with the spermatic and hypogastric veins, and as it has then a much larger quantity of blood to transmit to the right side of the heart than in the unimpregnated state, it is easy to explain why hæmorrhoidal swellings and dilatation of the veins of the lower extremities should so often occur at all the different periods of gestation. The affection usually commences in the veins of the feet and ankles, is often confined to these parts, and is so slight that it is relieved by the recumbent position during the night, without any medical treatment. In other cases, all the branches and trunks of the saphena veins are greatly distended, and sometimes burst, or become inflamed, and

thereby give rise to a partial phlegmasia dolens. In men, exposure of the limbs to cold and moisture, ulcers and external injuries over the tibia, have sometimes excited inflammation of the saphena and femoral veins, and by obstructing these vessels have produced all the phenomena usually observed in the phlegmasia dolens of puerperal women. From what has now been stated respecting the cause of varicose veins during pregnancy, you will readily understand the principle upon which their treatment should be conducted, and that all our remedies should be employed with the view of lessening the current of blood flowing through the vena cava. Tight bandages around the limbs, and laced stockings, will only force the blood from the branches into the trunks of the abdominal veins and cavities of the heart, and can do nothing but mischief, as experience has proved. Active saline cathartics, light diet, the recumbent position, and leeches, fomentations, and tepid saturnine lotions, to the dilated veins, when they are painful, are the safe and proper means to be employed. The same treatment may be had recourse to in painful hæmorrhoidal affections, occurring during pregnancy. Where the external parts become swollen, inflamed, and are affected with great irritation, besides these means it may be requisite to take blood from the arm, and give calomel and opium internally. The vagina and labia are sometimes covered with warts in the latter months of pregnancy, and there is a profuse leucorrhœal discharge. The tepid hip-bath is useful, and the black or yellow wash as a lotion, and it is advantageous, sometimes, to give mercury and sarsaparilla.

Congestion, morbid sensibility, irregular spasmodic contractions like labour pains, or fixed pain in the uterus, are experienced by many women in the latter months of pregnancy. In some cases these pains are most distressing during the day, and are readily excited by walking; in others they occur during the night, and often depend on dis-

ordered states of the digestive organs. Fomentations and leeches to the region of the uterus, where there is fixed pain or soreness on pressure, should not be neglected, and a moderate venesection if there is excitement of the heart and arteries: where the irritation arises from a deranged state of the bowels it is often useful to exhibit a dose of calomel, and afterwards a cathartic, combined with some anodyne and carminative. Inflammation of the peritoneal coat of the uterus is rarely met with during pregnancy. Pain of the uterus, increased by pressure, rigors, quick pulse, furred tongue, sickness at stomach, are the symptoms by which it is characterised; and if blood-letting, local and general, calomel, opium, and the other remedies usually employed in puerperal peritonitis, be not vigorously used, the result will be equally unfortunate. The uterus is found, after death, imbedded in lymph and pus, and there is a copious sero-purulent effusion into the peritoneal sac. Women who have had attacks of puerperal peritonitis are more liable than other women to suffer from pains about the uterus during pregnancy, the result probably of morbid adhesions. Spontaneous laceration of the peritoneal coat of the gravid uterus, not involving the muscular coat, has sometimes occurred, and a fatal effusion of blood has taken place into the peritoneal sac. Numerous lacerations of little depth have been observed at the posterior surface of the uterus, of the cause of which no satisfactory explanation has yet been given. In some cases, before labour has commenced, all the coats of the uterus have given way, and the fœtus and its appendages have escaped into the peritoneal cavity. Dull pain in the region of the uterus, vomiting, and fever, are the symptoms which have been observed in these cases, and have accompanied the softening of the coats. Where the gravid uterus has been pierced with musket-balls or sharp instruments, escape of the liquor amnii, hæmorrhage, vomiting, collapse, and death, have generally followed in a short time. There are some extraordinary cases of recovery, however, reported, where the walls of the uterus had been perforated, and the fœtus killed. Contusions, blows, and falls, are sometimes followed not only by hæmorrhage and inflammation, but by immediate collapse. A woman near the full period struck her abdomen against a gate, and she remained several hours in a condition resembling that produced by violent concussion of the brain.

Displacements of the Gravid Uterus.

Partial and complete prolapsus may take place both in the early and latter months, but it is not a common occurrence. Before the middle period, little difficulty is experienced in restoring the uterus to its

natural situation, and retaining it with a sponge or pessary. At the full period it has been found impossible. In a case which occurred ten years ago, the greater part of the uterus, near the full period, with the everted vagina, had escaped through the outlet of the pelvis, and it appeared at first impossible that such a mass could ever be reduced. The patient was placed upon the elbows and knees, and by long-continued gentle pressure, the uterus and vagina were restored to their natural situation, and the labour was natural. In cases of partial prolapsus uteri, and procidentia of the anterior wall of the vagina and bladder, the recumbent position, and a pessary of soft sponge, are generally sufficient to afford relief.

In *this engraving* by Dr. W. Hunter [exhibiting it], you have a representation of that displacement of the gravid uterus which is called *retroversion*. The neck of the uterus is drawn up behind or above the symphysis pubis by the bladder being over distended with urine, and the fundus uteri is pushed downward and backward into the hollow of the sacrum, by which means the longitudinal axis of the uterus is placed horizontally instead of vertically in the cavity of the pelvis, and thereby produces injurious pressure on the neck of the bladder and rectum.

Retroversion of the uterus is a consequence of an undue accumulation of urine in the bladder; and by pressing on the neck of the bladder, the retroverted uterus is a cause of retention of urine. The efforts made to empty the bladder probably contribute to produce the effect. It is an accident which generally occurs before the end of the fourth month of pregnancy; but some believe, where the pelvis is very capacious, that it may take place as late as the sixth or seventh month. In this affection there is pain and sense of bearing down in the pelvis, and the contents of the bladder and rectum cannot be evacuated. The bladder is felt distended in the hypogastrium; and if an internal examination be made, a large tumor is found occupying the hollow of the sacrum, and the os uteri is drawn up so high behind the symphysis pubis that it is difficult or impossible to reach it with the finger. The diagnosis is rendered difficult by this circumstance, that women state, what is true, that in the painful attempts to pass the urine a portion has escaped. In one case the patient reported that she had passed water freely, when the bladder was ready to burst. In all cases where there is the least doubt the hypogastrium should be carefully examined, and the catheter passed. In not a few cases of protracted labour, and after delivery, women have been exposed to the utmost danger from immense accumulations of urine taking place within the bladder without being suspected.

Retroversion of the uterus may take place suddenly, the patient experiencing a sensation of the uterus altering its position in the cavity of the pelvis, and this being soon followed by the symptoms now described; or the accident may take place more slowly, and the retention of urine may not be complete, at least for some time. Where death has occurred, it has arisen either from rupture or inflammation of the bladder and peritoneum. In Dr. Hunter's fatal case, the bladder was found amazingly distended, but not ruptured. In the cases related by Mr. Lynn and Dr. Squire, the bladder was perforated. In Mr. Wilmer's case the abdomen was greatly distended. Six pints of urine were drawn off, but the woman soon died. On inspecting the body, the bladder was found diseased, and containing a quantity of coagulated blood; and the inflammation had spread to the colon. In this case the umbilicus was protruded like half a melon, and the disease was at one time taken for hernia. The uterus was found to be so firmly wedged in the pelvis, that it could not be raised up till the symphysis was sawed away. Dr. Burns states that inflammation and gangrene of the vagina and external parts have also been produced. If the disease do not prove rapidly fatal, so much urine escapes as to prevent a speedy termination; and it occasionally happens that hectic fever is produced, the pulse becomes frequent, the body wastes, and purulent urine is voided; or the person may become cedematous, and the disease pass for dropsy. The catheter should be introduced into the bladder, and the urine drawn off, as soon as the affection is detected. The pressure of the os uteri against the inside of the symphysis may be removed by the finger being introduced, and the os uteri pushed back, that the small elastic catheter may be allowed to enter; and there are few cases in which it will not be possible to relieve the patient by drawing off the urine with the catheter. Blood should afterwards be taken from the arm to prevent inflammation, and the uterus should be left till it spontaneously resumes its natural position, which it usually does in due time if the bladder is kept empty, without mechanical means being employed for its reduction.

In some cases the uterus immediately recovers its position on the bladder being emptied. Stimulating enemata should frequently be thrown up, and all the proper local means employed to allay irritation and prevent inflammation. Gregoire and Levret had pointed out retroversion of the uterus before it had been noticed by any writer in this country, but its true nature was imperfectly understood before the publication of Dr. Hunter's essay on the subject in the fourth and fifth volumes of the London

Medical Observations and Inquiries. For ascertaining the general cause and the proper mode of treatment, we are chiefly indebted to Dr. Denman, who first clearly pointed out the fact that the retention of urine is the cause and not the consequence of the alteration in the situation of the uterus, and that violent attempts to replace the uterus are unnecessary, and often mischievous. Retroversion of the uterus is seldom met with; not more than six cases have come under my observation in 16 years, and they all did well. There are various other displacements of the gravid uterus, as anteversion and obliquities, which have been described by systematic writers, but these are of still more rare occurrence, occasion but trifling inconvenience, and require, therefore, no detailed history of their symptoms and treatment.

Sympathetic affections of the brain and of the thoracic and abdominal viscera.—Plethora and irritation of the brain and nervous system are frequently observed during pregnancy. Cephalalgia, giddiness, insomnia, drowsiness, flushing of the countenance, disturbed vision and hearing, are the most common symptoms, and usually precede, in the latter months, those dangerous attacks of puerperal convulsions and apoplexy which are so frequently met with in practice. It is of the greatest consequence, when one or more of these symptoms are observed, that the condition of the brain and of the whole system should be carefully investigated, and the appropriate treatment be promptly applied. By cathartics and low diet relief may sometimes be obtained, but it is generally necessary to have recourse to depletion,—to abstract blood from the arm, or from the temples or nape of the neck by leeches and cupping, to remove the hair and apply cold to the head, and to use all the other means which are known to have the power of diminishing the flow of blood to the brain. In these cases it is seldom necessary to abstract large quantities of blood either generally or locally; and if the countenance is pale and the pulse feeble, the application of leeches to the temples is all that is required. There are some cases, indeed, in which the sight is chiefly affected,—where amaurosis has taken place, with dilated pupils, or where the half of objects has only been seen, and where no relief but rather an aggravation of the symptoms has followed depletion. These are cases of pure nervous irritation without plethora, in which a light nutritious diet, combined with tonics and antispasmodics, are far more useful than blood-letting. Where there is much headache, drowsiness, and flushing of the face, especially in a first pregnancy, depletion is always requisite. In the attacks of hysteria which sometimes occur both in the early and latter months of pregnancy, periodical

headache is a common symptom, but it generally yields to the employment of laxatives and antispasmodics, without depletion. I have seen only one case of chorea during pregnancy, which terminated unfavourably, and I feel unable to offer any remarks on similar cases. Severe attacks of toothache are often experienced by pregnant women, but no operation should be performed, however urgent the symptoms;—the pain and inflammation should be relieved by leeches to the gums, and stimulants and anodynes. Creosote sometimes does good. In a case which recently occurred, violent toothache took place, without any obvious cause, a few days before the period of quickening, and the pain ceased the instant the movements of the child were felt.

All the organic affections of the heart are aggravated during pregnancy, and sometimes prove suddenly fatal. Where they are previously known to exist, and there is much palpitation and dyspnoea, moderate depletion, saline purgatives, digitalis, and diuretics, are the principal remedies. Where dropsical effusion takes place, and great difficulty of breathing occurs, it might be justifiable to induce premature labour, but this should never be done without a regular consultation. Violent nervous affections of the heart, simulating the organic diseases of the organ, sometimes arise, and should be treated like other nervous disorders of pregnant women. Cough is one of these, which frequently harasses women during the latter months, and defies all treatment till labour takes place, and then it spontaneously ceases. Phthisis is sometimes retarded by pregnancy. The dyspnoea and other distressing symptoms are best relieved by the occasional application of leeches and blisters to the chest, and the internal use of antimonial and anodyne medicines. I have seen six or seven women die from phthisis before delivery took place.

Affections of the digestive organs occur more frequently, and produce a greater degree of suffering to pregnant women, than all the diseases which have now been described. The morning sickness is so common a symptom of pregnancy, and is experienced so slightly, that most women expect to suffer from it, and consider no medical treatment requisite. Besides obviating constipation by saline effervescing and other purgatives, the horizontal position, and light food, nothing is required. But in some women the sickness is severe and obstinate in the highest degree, and proves not only a source of discomfort, but of real danger. In the greater number of cases, in nearly all, at least at the commencement, the irritability of the stomach is the consequence of mere nervous sympathy with the uterus. Vomiting may take place during pregnancy so as to produce death, and yet there may be

no trace of inflammation in the coats of the stomach, uterus, or any part of the ovum. This I know from a fatal case which occurred two years ago. M. Dance has, however, recorded two cases, where inflammation of the uterus and decidua appeared to be the cause of fatal vomiting during pregnancy. In his first case, severe vomiting without fever was followed in three months by death. The stomach was found perfectly healthy, but the deciduous membrane had been inflamed. In one part the uterus itself was remarkably soft; the chorion and the amnion were healthy; but between the uterus and decidua white false membranes were found, precisely similar to those which cover the inflamed pleura. Between the placenta and uterus was a layer of concrete pus. The second case related by M. Dance likewise proved fatal. The substance of the uterus was found unusually soft and thin, and of a violet colour, and gorged with blood. The membrana decidua, he says, participated in the disease. In cases of obstinate vomiting during pregnancy, if the epigastrium is tender on pressure, and the pulse is hard and accelerated, blood should be drawn from the arm, or, by leeches, from the pit of the stomach; and, afterwards, a blister applied, or a piece of linen rag soaked in laudanum. I have seen all this done without the slightest relief; and leeches, and blisters, and anodynes, also applied to the region of the uterus; and calomel, opium, hydrocyanic acid, creosote, chalk mixture, effervescing draughts, and all other sorts of medicines, given internally, without the slightest advantage. Some women have lived for weeks in the horizontal position on a little brandy and water, or milk and lime, or soda water, and ultimately recovered, when all the different remedies employed produced little or no benefit. If the vomiting is incessant, and there is great fever and emaciation, and all the different remedies have failed, the only effectual practice is to destroy the ovum, by introducing the stiletted catheter into the uterus, and puncturing the membranes. This ought not to be deferred too long, otherwise it will only hasten the fatal result. Whatever the circumstances of the patient may be, this operation must not be performed without the most mature consideration.

After what has been already stated, I do not consider it necessary to offer any further observations on the treatment of the various forms of dyspepsia in the gravid state, or to urge upon you the necessity of great attention to the diet of pregnant women, and the careful regulation of the functions of the stomach and bowels. Constipation should be obviated by mild cathartics, as olcum ricini and senna; acidity corrected by mag-

nesia, soda water, and other alkaline substances; and spasmodic attacks allayed by stimulants and anodynes.

I shall conclude this department of the course with a few remarks on the duration of pregnancy, and then proceed to consider natural and difficult labour.

Duration of utero-gestation.—The Roman law fixed the period of gestation at ten lunar months. The civil code of Prussia ordains that a child born 302 days after the death of the husband shall be considered legitimate. By the law of France, the legitimacy of a child cannot be called in question who is born 300 days after the death or departure of the husband. The laws of England declare that the usual period of human utero-gestation is nine calendar months, or forty weeks; farther than this they do not fix a definite period: the law is not exact as to a few days. Nine calendar months contain only 275 days, and only 273 or 272 if February be included. To fix bastardy on a child in Scotland, absence must continue till within six months of the birth, and a child born after the tenth month is accounted illegitimate.

The difficulty of determining the precise time when impregnation takes place in the human subject, renders it almost impossible, in any case, to calculate with absolute certainty the duration of pregnancy. We are, however, in possession of a sufficient number of observations to establish the fact that the ordinary period is about forty weeks, or 280 days; but it is certain that it does occasionally exceed or fall short of this period by several days. As we can never be certain of the precise day, between the periods of menstruation, when conception occurs—whether it takes place immediately after the last period, or before the expected period, or midway between these—it is obvious that all calculations founded upon the cessation of the catamenia must be extremely uncertain. The error of the calculation will be still greater if the catamenia should have appeared, or a discharge like the catamenia should have occurred once or twice after conception. Impregnation most frequently takes place soon after menstruation, but in others it does not happen till a few days before the expected period; so that two women may have menstruated at the same time, and one may have reached the full period three weeks before the other; and to this extent, or nearly so, an opinion founded on the disappearance of the catamenia may be erroneous.

Calculations of the duration of pregnancy, founded upon what has been observed to occur after casual intercourse, or perhaps a single act, in individuals who can have no motive to tell us what is false, are likely to be much more correct; and the conclusion to be drawn from these is, that labour usually, but not invariably, comes on about 280 days

after conception, a mature child being sometimes born before the expiration of forty weeks, and at other times not until the forty weeks have been exceeded by several days. A case came under my observation very lately, in which I had no doubt the pregnancy existed 287 days: the labour did not take place till 287 days had elapsed from the departure of the husband of this lady for the East Indies. Some women are always delivered before the end of the forty weeks, according to the usual calculation, and their children are mature.

I received a letter in February 1842, from Dr. J. C. Hall, of Bawtry, in which he stated a very curious fact, and one which I am not aware had been previously pointed out, viz. that the duration of pregnancy in the cow is influenced by the male. In 726 cases, he found that with other males the time of gestation was 284 and 285 days and that all the cows impregnated by another male belonging to Lord Spencer, went five or six days longer.

In the evidence given on the Gardner Peerage cause, the period of utero-gestation was limited, but not strictly, by some of the witnesses to forty weeks, or 280 days; by others it was extended to 311 days. Dr. Merriman, whose opinion is always entitled to much respect, thinks the greatest number of women complete gestation in the 40th week, and next to that in the 41st. Of 114 pregnancies, calculated by him from the last day of menstruation, and in which the children appeared to be mature, 3 deliveries took place at the end of the 37th week; 13 in the 38th; 14 in the 39th; 33 in the 40th; 22 in the 41st; 15 in the 42d; 10 in the 43d; and 4 in the 44th week.

How long before the expiration of the 40 weeks a child may be born with the power of supporting life has not been determined. Where I have induced premature labour for distortion of the pelvis before the end of the seventh calendar month from the last menstruation, I have never seen a child reared. The lady of the clergyman in Fife, whose case has lately given rise to so much discussion, was delivered 175 days after marriage, and the child lived five months. To what extent gestation may be protracted in some cases beyond the 280 days it is very difficult to determine, and the opinions of the most eminent writers differ upon the subject. I should suspect some great error in the calculation where the period of gestation exceeded 300 days. But the experiments made upon the lower animals prove that there exists in them a great variation between the shortest and the longest gestation; and it is difficult to comprehend why there should be a difference in this respect in the human species.

Mons. Tessier made observations on 2136

animals, besides those on incubation, viz. 579 cows, 447 mares, 161 rabbits, 28 sows, 912 sheep, 2 asses, 8 buffaloes, 4 bitches. Of the 577 cows, whose period of gestation is the same as in the human species, 234 calved before the 280th day; 331 between the 280th and the 299th day; and 10 between the 300th and the 321st day. The difference between the longest and the shortest period was 81 days; and the greatest extension amounted to 41 days beyond 280.

Of the 447 mares, whose period of pregnancy is 11 months, 405 foaled between the 329th and the 359th day; 35 from the 359th to the 377th; and 7 between this and the 419th day. The difference between the extremes being 129 days, and the greatest protraction 84 days. The greatest variation in the 912 sheep was 11 days, and the extreme protraction 6 days. In the rabbit, whose natural period is 1 month, the difference was 8 days. Of 912 sheep, whose natural period of gestation is 5 months, or about 151 days, 282 yeaned from the 146th day to the 150th=334 from the 150th to the 153d; 84 from the 153d to the 155th; 7 on the 156th day; 5 on the 157th. The greatest variation being 11 days.

In the next lecture we shall proceed to consider Parturition.

LECTURE

ON

ANIMAL ELECTRICITY,

*Delivered at the Polytechnic Institution,
before the Members of the Electrical
Society,*

By H. LETHEBY, M.B. A.L.S.

Curator of the Museum, and Lecturer on Comparative Anatomy at the London Hospital.

[Concluded from p. 891.]

In generalizing, then, upon the facts which we have learnt from our inquiries into the anatomy of these singular animals, we find that they are all inhabitants of the water; that their bodies are not covered by scales, but by a thick mucus, which is secreted by glands lying abundantly in the neighbourhood of the head and electrical organs; while in their interior we discover a remarkable organ called the battery, composed alternately of aponeurotic septa, whose fibres are so arranged as to form cells, in which is contained an albumino-gelatinous fluid; moreover, these organs are abundantly supplied with nerves, much more so, indeed, than is necessary to the common purposes of life. Nor is the organ a vital one, but seems rather to be, as Geoffroy supposed, a tegumentary modification, intro-

duced without producing any notable alteration in the rest of the organization; and, judging from the dissections which stand upon the table before you, and of which these are drawings, it would seem that they result from an increased development and peculiar arrangement of a common aponeurosis to be found in all fish. Thus, in the torpedo, of which a transverse section is here seen in comparison with a similar section of the ray, it is produced by an hypertrophy, as it were, of the aponeurosis which exists between the branchiæ and the great semilunar cartilages, and not, as Geoffroy supposed, by an enlargement of a glandular structure. By comparing the sections of the gymnotus and conger, also here preserved, we find in both the same number of dorsal and lateral planes of muscles, with their intervening aponeurotic septa, the lower one of which has become, in the gymnotus, amazingly developed, and so has formed the greater electrical organ, which, by its increase, has pushed up the other planes of muscles, one only remaining beneath it, and which intervenes between it and the lesser organ, which arises in a similar manner from the increase of an inferior septum. In the silurus it is the enveloping aponeurosis which has become developed into a battery. From these considerations we cannot regard the electrical organs as superadded structures, but rather as the increase of a common integument; we know, from the study of comparative anatomy, how chary nature is of any addition to the animal structure, and in any other point of view here would be an addition of a marvellous and unparalleled character: it is probable, too, that the examination of neighbouring species will exhibit to us the same aponeurosis in progress of increase. Dr. Davy has also found that the growth and formation of the battery of the torpedo is of comparatively late occurrence; in very young fish there is little evidence of its existence, but it is formed, as he supposes, from matters absorbed by the branchial filaments, and if Hunter's observations be correct respecting the yearly additions to the organ, they are further evidence of our opinion.

Thus, then, the two, and the only propositions which dissection has furnished us, are the existence of peculiar organs composed alternately of septa and fluid, and a large supply of nervous energy to these: from these two data, together with others that are to be derived from experiments on the mutilated animal, are we to form our opinion as to the origin of their electrical force. But first, we may take a brief review of the different notions that have been entertained relative to its nature and cause. In 1678, the Italian school, at the head of which was Redi and his pupil Lorenzini, supposed that

the shock of the torpedo was dependent on the thrill produced by the contraction of certain muscles, called by the latter *musculi falcati*, of which he considered the battery to be composed; and this was the general opinion until the days of Hunter, whose dissections showed that Lorenzini had mistaken the columns of electrical organ for muscles. Another notion, equally absurd, was prevalent, that it depended on the effluvia of certain small particles which arose from the fish's body. About a century later, when the discovery of the Leyden phial became better known, the analogy of its effects with those of the torpedo were soon recognised. Walsh and Muschenbroek were the first to direct attention to them, though they failed in establishing their identity, and were even unable to get the more common effects of electricity. The Hon. Mr. Cavendish, however, nothing daunted by these failures, soon proved that the effects of a Leyden phial would be similarly destroyed if subjected to the conditions under which a torpedo manifested its discharge. He discovered that any number of bodies making so many circuits, each would carry a part of the electricity during a discharge, and in proportion to its conducting power, that if the discharge take place through water, the water is a conductor all around, but in proportion to its distance. By using a torpedo made of leather, and having one disc of metal upon the dorsal and another on the ventral surface, and connecting these respectively with the ends of a battery of 49 small jars previously charged, he obtained effects precisely similar to those of the torpedo; and found, moreover, that he could not get the spark, or make the discharge pass across the nick in a piece of tinfoil; but still, all these only went to prove an apparent identity of the phenomena, they gave no idea whatever of the origin of the force: and so things remained for a quarter of a century, when Volta announced the discovery of his wonderful pile—asserting that two dissimilar bodies placed in contact gave rise to electricity. Such an announcement was certain to attract fresh attention to animal electricity, and the electrical organ of the torpedo was likened to his pile. Many misgivings, however, existed as to the analogy of their effects—Sir H. Davy asserting that they were more allied to those of ordinary than to voltaic electricity; nor could he see in the battery the arrangement of a galvanic apparatus. His brother, too, Dr. Davy, entertained similar opinions, and likened them to the effects of common electricity of large quantity but small tension. Such, also, is the idea formed of it by many of our ablest electricians at this time, although there are not a few physiologists who still adopt the explanation of Volta; and therefore it will be necessary for

us to consider the arguments which exist upon both sides of the question, premising that it is everywhere sufficiently proved and admitted that the organs are in some way immediately connected with the manifestation of the electrical phenomena. And first, Do the organs themselves originate the power? The advocates of this opinion found their arguments upon the analogy which the mechanical arrangement of the battery furnishes to a voltaic pile, it being composed of alternate layers of dissimilar substances: in such a point of view there ought not to be a single square inch throughout any animal frame but should be a galvanic battery. But the principle itself, namely, that of *contact*, is, in all probability, erroneous, and every day brings fresh facts to overturn Volta's theory. But again, the careful consideration of the elements, and their arrangement in a voltaic pile, will show, as Schön-bien has asserted, that the living organ does not possess even an indeterminate resemblance, much less identity of circumstance under which the electric phenomena are produced in the two. But, for argument's sake, were we to admit that the experiments of Humboldt, of Pfaff, Bruntzen, Provost and Dumas, Kaentz, and others, have proved that the *contact* of dissimilar animal substances is capable of producing electricity, and even admitting that the arrangement of the pile exists in the organ, what do we explain? Merely a generation of power which we have means of accounting for much better. It gives us no idea how it is to be accumulated, why it should be at the voluntary service of the animal, why its action does not go on at all times like that of a constant battery, and its discharges, therefore, be regular and constant, and why, if it be due to the physical arrangement, we do not get shocks directly after death, or when the nerves are divided: in this case, the elements of the battery, for a short time at least, must remain the same. To my mind, this is a most unsatisfactory explanation, and we must rather look to the brain and nervous centres for the force which accumulates in the battery in the same manner as electricity does in a Leyden phial. Experiments on mutilated animals also tend to support this view. Thus we find, in the first place, that the shock is only manifested while the nerves are entire. Todd found that on making a division of the nerves which go to the battery, (and this he did without injury to the other parts,) the animal, though it lived as long as the uninjured torpedo, and seemed equally lively, yet it ceased to give shocks when irritated; and Matteucci found that the intensity of the shock diminished exactly in the ratio of the number of nerves which he divided. Moreover, Matteucci has further observed that irritation

of the brain would produce shocks after the animal had otherwise ceased to exhibit them. And Davy remarked, that when a small portion of brain was left attached to the nerves of the battery, it shocked an assistant who held it. Humboldt, also, cut a gymnotus transversely through the middle of its body, and found that the anterior portion alone was able to give shocks. Dr. Todd has divided all parts around the organ, except the nerves, and with the organs thus insulated he was able to get the shocks just as usual. Now if it had been dependent on circulation and secretion, the battery should have ceased to act. Spallanzani, too, found that the extirpation of the heart did not diminish the shock until the great loss of blood had reduced the vital powers generally, and therefore it could not have been dependent on circulation or secretion.

Again, the evident nervous exhaustion which is manifested after repeated discharges, or, as Dr. Faraday expresses it, "the apparently equivalent productions of electricity in proportion to the quantity of nervous force consumed," would favour this view: it was also observed, that the animal which he experimented on at the Adelaide Gallery appeared fatigued and exhausted after an evening's illustration; and this fact is made still more evident by the Indian method of capturing the fish. Todd also noticed the same fact relative to the torpedo: he took, for instance, two of these fish of the same size and vigour, and while one was allowed to remain quiet, the other he irritated to give repeated shocks, and it soon became exhausted and died, though the former lived three days; and this he found was generally the case. Dr. Davy also noticed that with a great expenditure of the electrical force has resulted a want, as it were, of nervous energy in other parts: some torpedos on which he experimented were found, after several days, with fish in their stomachs not in the least digested. Let us look, again, at the voluntary nature of the discharge, and it would seem as if the animal was capable of knowing when the shock was effective, for it will not repeat it except with advantage.

Lastly, we cannot but be struck with the great amount of nervous supply which each organ possesses: it was this circumstance, indeed, which attracted the attention of Mr. Hunter, who says, "that the magnitude and number of the nerves bestowed on these organs, in proportion to the size, must, on reflection, appear as extraordinary as the phenomena they afford. Nerves are given to parts either for sensation or action: now, if we except the more important senses of seeing, hearing, smelling, and tasting, which do not belong to the electrical organs, there is no part, even of the most perfect animal, which, in proportion to its size, is so liberally

supplied with nerves, nor do the nerves seem necessary for any sensation which can be supposed to belong to the electrical organs; and with respect to action, there is no part of any animal with which I am acquainted, however strong and constant its natural actions may be, which has so great a proportion of nerves. If, then, it be probable that those nerves are not necessary for the purposes of sensation or action, may we not conclude that they are subservient to the formation, collection, and management of the electrical fluid, especially as it appears evident, from Mr. Walsh's experiments, that the will of the animal does absolutely control the electric powers of its body, which must depend on the energies of the nerves. Taking all these points, then, into consideration, it appears far the most probable that the electric fluid is derived from the brain, to be sent along the nerves, and concentrated in the battery, whence it is discharged through the water in a determinate direction. It is also probable that the discharge takes place spontaneously, as in Harris's unit jar, when the tension has become sufficiently great to overcome the resistance offered to its passage; and the animal appearing aware of this, and having no control over its direction, adopts the position best suited to concentrate it on its prey. The gymnotus, in giving a shock, either attaches itself directly to the body to be shocked, or else, bending itself into a semicircle, it makes the animal complete the circuit between the head and tail. The torpedo also struggles violently before giving a shock, in order to bring its dorsal and ventral surfaces to bear at the same time upon the animal.

And now, to look back upon our inquiries into the phenomena of these singular animals, we cannot but have observed many facts of peculiar interest to the physiologist: and without advancing to the speculations as to the abstract principle of life, against which I cautioned you at the outset of this lecture, we may be permitted to investigate the cause of its secondary operations, and of the manifestation of those actions by which we become cognizant of the existence of such a principle. Without the nervous agency we should have no conceptions, and in all probability there would be no evidences of animal life; it is through it we become possessed of our relation to the external world, and, though we pause to inquire what this may be, yet we do not hazard ourselves a step further. When I study the complications of a piece of machinery, and the force which keeps these in action, it does not imply an inquiry into the origin of that machine: the first is intelligible, and within our reach; the latter abstractedly cannot be: the principle that called the living world into existence is as rife in its simplest creature

as it is in the highest and most complex of God's works. The simple monad, or even its germ, may possess as much, or more, of this element than man—the tenacity of it, at any rate, is greater; but there can be no question that the phenomena which they exhibit are incomparable: and these seem to pursue a ratio exactly equivalent to the amount of chemical action which they exhibit, and to the development of systems, of which the nervous is one necessary to its manifestation.

In our investigations we have seen that the phenomena of electrical fish are due to electricity, and that they derive this from the brain. In all probability it is not a peculiar force evidenced only in these fish, but is the common one of nervism; and the force which traverses all nerves may be electricity. This is a notion which has been long entertained by many of our ablest physiologists; for experiment shews us, that a current of electricity sent along the different nerves produces effects precisely analogous to those which are consequent upon the transit of the nervous force. If it be sent along motor nerves, muscular action is the result; along sensitive ones, we affect the sensation peculiar to that nerve. Thus, by means of a simple galvanic current passed through the eye, we produce the effect of light; through the auditory nerve, that of sound; and the nerves of taste and smell may be similarly acted on. Indeed, Dr. Wilson Philip has even asserted that he can produce the secretion of the gastric juice by sending a current along the divided pneumogastric nerves. Some deny this; but it is evident we can augment the secretion of saliva and of the tears by means of electricity. This may be said, however, to be merely a stimulus. I do not quarrel with the explanation—it does it—but I may ask what they mean?

But when we assume that the nervous force is electrical, because a current of electricity sent along the nerves will give rise to effects simulating the vital functions, we ought, upon the principle of action and reaction, to be able, during the natural performance of these functions, to detect a current of electricity. Various experimenters have inquired into the truth of this, but with somewhat contradictory results. We should remember, however, that most of these have originated in preconceived notions. Thus, Person, Müller, and some others, assert that they have never detected free electricity traversing the nerves. Hermer, however, Phaff, and Ahrens, have; and this not only in the lower animals, but in man: and the latter observers assert that it is increased after spirituous drinks, but diminished as the body cools; in other words, it is in the ratio of the chemical changes of the respiration.

Matteucci, also, has observed a deviation in the galvanometer, amounting to fifteen or twenty degrees, when the liver and stomach of a rabbit were connected with the platina ends of a galvanometer—an action which was not due to the different chemical properties of the secretions, for it ceased with death; and, more recently, Professor Zantideschi and Dr. Favio assert, that in all warm-blooded animals there are two electro-vital or neuro-electric currents; one external or cutaneous, which directs itself from the extremities to the cerebro-spinal axis, and the other internal, going from the cerebro-spinal axis to the internal organs. These currents grow weaker in proportion as life ceases, or as pain is felt, while the convulsive or voluntary movements give a strong current or increase the discharge.

I do not refer to the experiments of Prevost and Dumas, although confirmatory of this position, because their truth has been questioned; nor perhaps am I warranted in mentioning those of Vasseur and Berandi, who assert that needles passed through the nerves of a living animal become magnetic, while division of the cord, they say, destroys this property, but the inhalation of oxygen increases it. M. David also reports, that he has seen a galvanometer deflected when its poles were inserted into the bared nerve of an animal, and it was made to move, and that there was no motion when the spinal cord was divided. Müller has repeated both these experiments without success. But, supposing that we had never yet detected a current of electricity traversing the nerves during functional activity, we are not therefore to conclude that there is no traverse of an electric current. We should bear in mind the great effects which our weakest and otherwise inappreciable currents are capable of producing on the living muscle; and, to detect a current of as weak tension as must be that of the nerves, we should possess galvanometers as delicate as living muscle. Matteucci has lately, indeed, used this; and, by its means, is able at any time to make the leg of one frog contract by connecting it with a wound made in that of another. We assert too much, also, when we say that the nerves are not better conductors of electricity than any other parts. There are certain facts which seem to prove that they are; nay, more, that the central pulp is the conducting agent; and this explains the action of a ligature or compression on a nerve. I have before met the principal argument against the identity of the nervous and electrical forces, namely, that any stimulus will do as much towards exciting the action of a nerve as electricity. True; but every one of these are originators of electricity.

From these propositions we are warranted in assuming that it is the force of common

nervism; and there are many who entertain a similar opinion. Dr. Watson, in his Lectures on Medicine, which were published last year, says, "I incline to the opinion that the influence which originates in the grey matter, and is transmitted by the white, will be found at last to consist in, or be nearly allied to, electricity;" and Dr. Faraday observes, "that from the time it was shewn that electricity could perform the functions of the nervous influence, he has had no doubt of their very close relation, and they probably are effects of one common cause." This was, moreover, Dr. Wilson Philip's opinion, as well as that of Woilaston, Treviranus, Carus, Prevost and Dumas, Matteucci, Meissner, and many others. Nor should I forget to add the name of Sir J. Herschel, who says that the present state of electrical science warrants the conjecture that the brain and spinal marrow form an electrical organ, which is spontaneously discharged along the nerves at brief intervals, when the tension of the electricity reaches a certain point.

But with all this we have yet to inquire into the origin of the electrical force, and, secondly, how it arrives at the brain to be at the voluntary service of the animal. In the inorganic kingdom the source of electricity is chemical action. It is the same without doubt in the living organism; indeed, the great element of existence seems to be chemical action; and the wonder would be, how these could be maintained without the development of electricity. Many of the principles of our food, as well as the old matters formerly components of our bodies, are undergoing, through respiration, combustion, and being converted into carbonic acid and water. The result of these changes must be a manifestation of heat and electricity. The former keeps up the temperature of our bodies; the latter, in my opinion, serves to maintain the vital functions; for we find, when we check respiration or oxidation, we check every outward evidence of life; while, on the other hand, if we increase it, either by the inhalation of a purer or denser atmosphere, or one containing more oxygen, as protoxide of nitrogen, for instance, we increase these evidences; and so also when we increase chemical action, by throwing into the system compounds which are easily burnt, as, for example, spirituous drinks; so that, to use the words of Professor Liebig, "all vital activity arises from the mutual action of the oxygen of the air and the elements of the food:" therefore, every phenomenon of life is dependent on chemical action; and there is sufficient of this going on in every organism to account for the expenditures which are incidental to the most active existence. There is, moreover, a constant ra-

tio existing between this amount of expenditure and the activity of the respiratory changes; in cold-blooded animals, and in animals during hybernation, there is an apathy and want of energy in all their movements, while in the hot and actively respiring bird there is a proportional increased expenditure and exhibition of nervous energy. To look, then, at the phenomena of life, we see they are manifested by a something which originates from chemical action, traverses the nerves, and produces in the animal body combinations and decompositions. From the former result nutrition and reproduction; it is the force of *vegetative life*, while decomposition determines *animal life*. It is an ascertained physiological fact, that when parts cease to perform their duties, whether naturally or otherwise, they begin to waste, and the function of nutrition becomes altered. We believe, therefore, that the passage of the nervous current is necessary to their growth and sustenance; while, on the other hand, there is also sufficient reason for believing that every mental effort, every sensation, every muscular movement, is accompanied by corresponding changes in the brain and muscle; its elements are given up to enter into new combinations with oxygen, from which electricity again results; and thus the circle is completed.

It is, however, a question of a more intricate character as to how this electrical force is made available, and reaches the brain—whether it be by the incident nerves, or by the blood in the vessels themselves. Meissner supposed that the blood became charged with electricity in the lungs during the process of respiration, and this, by traversing the ganglionic nerves, reached the brain, and was here accumulated for use. These are points concerning which, at this stage of our inquiry, we can only speculate. Hitherto our attentions have not been sufficiently directed to this view of the subject, and we are consequently not in a position to attempt an explanation. There are certain points, however, which are worthy of consideration. We find that the termination of nerves is in loops; that is, they return upon themselves at both extremities, and thus complete their circuit. The one loop is in the brain or cord, the other at the periphery; and we observe, moreover, that both of these loops are imbedded in an intricate plexus of capillary vessels. It is in these capillaries that the great chemical changes of the body are being effected; and we may, from these data alone, speculate rather extensively upon the phenomena of reflex action, but that there is neither time nor warrant for such. We are less able, however, to understand the act of volition—how, at any time when we will, a movement, a connection as it were, should be established, or a current of elec-

tricity sent out. But the phenomenon of a single movement is little compared with those of the associated ones, where there is a demand for the operation of a number of muscles, whose work must be done conjointly, and with just so much contraction, and no more, or we should fail in our purpose. When we consider also the multitudes of effects which one series of muscles is capable of producing by their varied degrees and orders of contraction, we are still more amazed. To refer, for instance, as Dr. Carpenter has beautifully shown, to the muscles of the larynx. All our sounds or tones are produced by the vibration of the vocal cords, whose degree of contraction is not more than the eighth of an inch, and yet the stages within this short space are sufficient, in ordinarily cultivated voices, to produce 240 intonations, and in practised vocalists the number is much greater. It is said that Madame Mara was able to sound 100 distinct intervals between each tone; and the compass of her voice was at least three octaves, or twenty-two tones; so that the total number of intervals was 2200, and all comprised in the contracting space of one-eighth of an inch; so that it might be said she was able to determine the contractions of her vocal muscles to the 17-1000th part of an inch; and this could all be done at will, and with the most perfect exactness. And then, again, look at the rapidity with which we can effect these movements. Many persons will pronounce 1500 letters in a minute, each of which must have required a separate contraction of muscular fibre; and when we consider that each such must have been followed by a relaxation of equal strength, it follows that every contraction was effected in the 3000th part of a minute. But the wings of insects are moved with much greater rapidity than this—sufficiently so to produce musical tones. This will give us some idea of the beauty, and regulation, and energy of muscular movement, and how inadequate we are to offer any explanation of the manner in which the transit of this acting force is effected, although we have reason for believing that that force is electricity; for we have

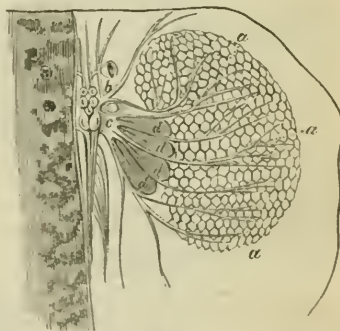
seen that the phenomena of the electrical fish are electrical, and that they derive this force from the brain.

2dly, That electricity sent along nerves gives rise in the living organism to effects precisely simulating the vital; and that, during the performance of the vital functions, electricity can be detected traversing the body.

3dly, That all vitality results from chemical action, and that chemical action gives rise to electricity.

Lastly, that electricity in motion gives rise to combinations and decompositions, and that the nervous force does the same. But though we have learnt thus much concerning the phenomena of life, we are yet perhaps but upon the threshold of what we may be permitted to know. Nature seems to have exhibited in these animals glimpses into her more intricate operations; has lifted the veil which before formed an impenetrable screen to the comprehension of her sublimest wonders. There is, as Sir H. Davy expressed it, "a gleam of light worth pursuing," and which may by its cultivation tend to illumine and make intelligible every problem connected with physiology, and thus raise the study of electricity to the highest position among the physical sciences.

FIG. 1.



Dissection from the right dorsal surface of the torpedo, showing the battery (aaa), with the distribution of the 5th (b) and 5th (c) nerves to it. d d d d, branchia.

FIG. 2.



Transverse section of the body of the torpedo, showing the columns of the battery extending from the dorsal to the ventral surfaces, and their subdivision into cells.

FIG. 3.



Fig. 3. Brain of the Skate.

a a. Cerebral hemispheres. *b b.* Olfactory commissures going to the olfactory ganglia. *c c.* Optic lobes. *d d.* Optic nerves. *e.* Cerebellum. *f f.* Medulla oblongata. *g. h.* Motor and sensitive branches of the fifth. *i i.* Auditory apparatus. *k.* Eighth pair of nerves.

FIG. 4.

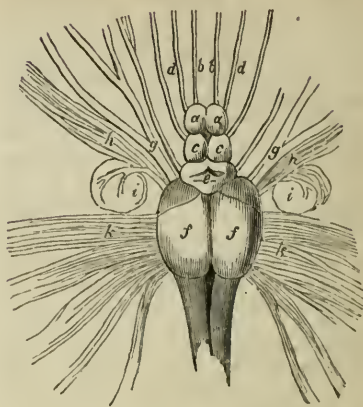
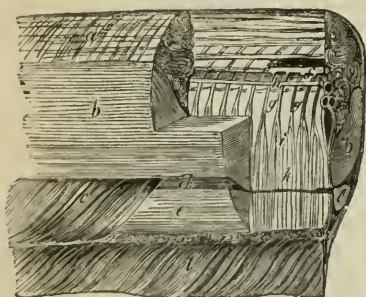


Fig. 4. Brain of the Torpedo.

FIG. 5.

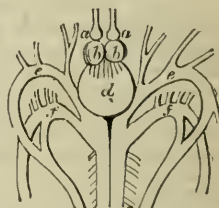


A transverse as well as longitudinal section of the *Gymnotus electricus*, showing the position of the batteries as well as the distribution of the spinal nerves. *a.* Dorsal muscles. *b.* Greater electrical organ. *c.* Muscles of the fin, covering in the lesser electrical organ (*e*). *d.* Inferior plane of lateral muscles. *f.* Spinal cord, giving off (*g g*) spinal nerves, which subdivide and run down over the air bladder (*i*) and vertical septum (*k*). *l.* The fin.

FIG. 6.



FIG. 7.



Comparative views of the brains of the Conger (*Murana conger*, Fig. 6), and *Gymnotus electricus* (Fig. 7). *a a.* Olfactory lobes. *b b.* Cerebral hemispheres. *c c.* Optic tubercles. *d d.* Cerebellum. *e e.* Fifth pair of nerves. *f f.* Eighth pair of nerves.

EFFICACY OF ELECTRICITY IN A CASE OF POISONING BY LAUDANUM.

To the Editor of the Medical Gazette.

SIR,

I BEG to send you the accompanying history for insertion in your valuable

journal, should you think it worthy a place.

I think it is interesting, as it affords an example of the value of electricity as an excitor of the nervous centres, after the influence of a powerful narcotic has rendered them incapable of obeying their ordinary stimuli. The death of the patient, in this instance,

appears referable rather to exhaustion than to the agency of the poison. On account of her extreme youth we were deprived of the usual means of administering support.—I am, sir,

Your obedient servant,

JAMES RUSSELL, M.B.
House-Physician.

King's College Hospital,
Feb. 14, 1843.

Mary Anne Hugdon, aged two months, admitted at eleven, P.M.

A dose of laudanum, amounting to twelve drops, had been administered by mistake four hours and a half previously. The medicine produced deep sleep, and, in the space of two hours, convulsive movements of the extremities.

When admitted the infant was quite insensible and motionless. The surface was cold and exsanguine; the impulse of the heart could not be felt; breathing was very difficult, and was performed with intervals of half a minute at least between each respiration; the pupils were very small, and she had lost the power of deglutition. The usual remedies were employed without success, and in a quarter of an hour the child appeared to be quite dead; but whilst she was being removed she was heard to rattle in her throat, and immediately afterwards breathed deeply. This encouraged us to renew our attempts to restore animation. Our measures were, however, attended with very partial success. Respiration at first improved, but soon became again very difficult and irregular, and in an hour's time the condition of the patient was very little better than it was when we first saw her.

My colleague now proposed to try the effect of galvanic shocks passed through the body. An electro-dynamic apparatus was employed; one pole being placed over the upper part of the cervical region of the spinal column, and the other over the cutiform cartilage of the sternum. The greatest benefit resulted almost immediately. Rapid action of the diaphragm followed each application of the poles of the battery: a few short inspirations being drawn, followed by a deep breath. At this time five hours and a half had elapsed since the administration of the laudanum. The remedy was employed during an hour and a half, shocks being passed through the chest, and

along the course of the spinal column, whenever the breathing flagged. At first the stimulus appeared to influence the diaphragm alone; but in a short time the arms were extended, and soon afterwards the legs also, whenever the poles were applied to the surface of the body. The child opened her eyes, and seemed to notice surrounding objects: she uttered some cries, and the surface became warm. The head no longer sank on the shoulders, but was supported by the efforts of the patient, and with her lips she clasped the fingers placed in her mouth.

About 3 P.M., eight hours and a half after the laudanum had been taken, respiration became established, though not with regularity, and the further use of electricity was not required; but in half an hour a new train of symptoms set in; the pupils dilated widely, and the child fell into a state of exhaustion, without any of the symptoms of coma: the breathing was performed by sighs; the surface was again cold, and she became quite insensible. From this state it was found impossible to rouse her. However, she lingered till 4 P.M., when she died, quite worn out with her sufferings, twenty-one hours after the administration of the laudanum.

SEVERE LACERATION OF THE ARM PRODUCED BY A PIECE OF RED HOT NAIL IRON.

To the Editor of the Medical Gazette.

SIR,

IF you deem the following case of sufficient interest to occupy a place in your valuable journal, an early insertion of it will much oblige

Your obedient servant,

J. H. THORNHILL, M.R.C.S.L.

Darlaston, Staffordshire,
March 10, 1843.

During the evening of Friday, the 3d of February of the present year, my brother was summoned to a man named Benjamin Garrington, æt. 30, who was represented to have received a severe laceration of the arm, accompanied with a frightful loss of blood. On arriving at his dwelling-house, the patient was found lying on the floor deluged in blood, and on examining the right arm there was discovered a

wound, bearing the appearance of a gun-shot wound, commencing at about a quarter of an inch above the centre of the bend of the elbow, and taking a circuitous route around the inner side of the humerus, and terminating at the back of the arm about two inches above the olecranon process of the ulna. The poor fellow was both deaf and dumb; consequently there was some little difficulty in ascertaining the cause of the injury. Upon instituting a close inquiry through the aid of a neighbour, who undertook to act as interpreter by means of his fingers, my brother was informed that a youth who worked at a nail-shop adjoining the premises, and who had been "larking" with one of his playmates, and, desirous of frightening him, was in the act of running across the road with a piece of red hot nail-iron just drawn from the fire, when he came in contact with the man as he was going out of his house, and the iron entered the arm and produced the injury already described. After cleansing the wounds (there being no further disposition to hæmorrhage) they were dressed in the usual way with straps of adhesive plaster, and a tape bandage was applied in the same manner as in phlebotomy. These were allowed to remain till the following Sunday, when I changed the dressings. There had been no recurrence of the bleeding, and everything seemed to assume a favourable aspect, except that the anterior wound had manifested a disposition to discharge a larger quantity of sanguineo-serous fluid than is usual in such cases.

2 P.M.—A messenger came up to inform us that our patient was bleeding as bad as when he had first received the injury; and thinking it probable that the artery might require a ligature to be placed around it, my brother and I went down together to see the case. On removing the dressings the bleeding had again ceased, nor was it renewed by bending the arm in different directions. Having waited for some time, it was considered advisable not to resort to severe measures, especially as the quantity of blood stated to have been lost was altogether exaggerated; and the patient was accordingly placed in bed after the plasters had been once more restored, in order to keep him as quiet as possible, and to have him more under command should there be a further ne-

cessity for interference on our part. The poor fellow had not been in bed many minutes when, just as we were leaving his chamber, he uttered a strange sound, and to our surprise there was a most tremendous gush of blood from the wound, such as evidently tended to put his life in jeopardy. Now there was but one course to pursue, and that must be adopted without loss of time. My brother immediately compressed the vessel a little below the axilla, while I made preparations for tying the brachial artery at about the middle of the arm. Having made a clear incision, three inches in length, on the inner side of the belly of the biceps, and having divided the several layers of cellular tissue that interposed, the sheath of the vessel was soon rendered visible. This I at once opened, and passed a double ligature of thread around the artery, which, being thus compressed, immediately removed from the patient all feeling of alarm, which he expressed by numerous smiles and gestures. The edges of the wound were then drawn together by strips of adhesive plaster, and the arm was placed in a semi-flexed position on a pillow by his side. He was ordered to be kept quiet, and to have nothing given to him of a stimulating character.

10 P.M.—He appeared very comfortable. The arm remained of an agreeable temperature, having been covered with a succession of warm flannels. The pulsation of course had been cut off at the wrist.

7th.—No unpleasant symptom had appeared. He had passed two good nights. The arm was still warm. The incised wound was nearly healed by the first intention, except in the immediate neighbourhood of the ligature, but a copious discharge of sero-purulent fluid had escaped from the others below it.

9th.—The parts surrounding the original wounds were much swelled, and seemed painful on being touched; and there seemed to be a good deal of irritative fever. On removing the plasters the discharge did not seem so free as usual. Poultices were ordered to be applied around the joint, and saline medicines were administered every three or four hours.

10th.—Had a better night than on the one previous. The arm was neither so swelled or painful.

Cont. remedia.

12th.—He was much better, and the former dressings were resumed. Several small sloughs had escaped from the lower wound, accompanied by a sufficient quantity of healthy discharge.

From this time every thing continued to go on well; the ligature came away from the artery, and the man may be now said to have recovered his health. Pulsation is in some degree restored to the wrist, but it is still of a very indistinct kind.

ESSAYS ON THE DISEASES
OF THE
HEART, GREAT VESSELS, AND
CIRCULATING FLUID.

BY R. WILLIS, M.D.

Lecturer on the Principles and Practice of Medicine in the Aldersgate Street School of Medicine, late Physician to the Royal Infirmary for Children, &c.

[Continued from p. 870.]

Of Diseases of the Heart in general.

THE particular diseases of the heart, perfectly well characterized by their several physical signs, are remarkable for the great similarity both of the local and general symptoms with which their course is accompanied. Shortness of breath, in one degree or another, for example, is a symptom that occurs at an early period in the greater number of heart affections. Palpitation, and a sense of suffocation, are also extremely common; and both the short-windedness and the palpitation are greatly increased by any effort, such as walking quickly, running, ascending a stair, &c., as also by mental emotions of almost every kind. Patients affected with disease of the heart rarely sleep soundly and well. Their rest is made unrefreshing by frightful dreams: they are very apt to dream that they are put to death themselves, or they fancy that they witness the violent death of others, &c. Nothing is more common than for patients affected even very slightly with a disease of the heart to start up suddenly in alarm, either as they are dropping off to sleep, or some short time after they seem fairly asleep for the night. In thus starting up suddenly they frequently cough, in some sort convulsively, and without expectorating anything. This sudden awaking in

alarm may happen once or twice in the early part of the night, and the patient then fall asleep, and rest quietly enough till morning. I do not remember to have met with any explanation of the phenomenon. It is probably connected with impeded circulation through the lungs. As we fall asleep the respiration becomes considerably slower than it was immediately before; in very deep sleep each respiration is an effort, and is apparently only performed from the increasing urgency of the uneasy sensation that is at once allayed by taking in a new draught of air. The pulse at the same time falls in frequency, and the balance is maintained between the activity of the circulation and that of the respiration. But with a heart acting faultily, pushing rather more blood per chance into the pulmonary artery than it can transmit, or, on the contrary, refusing readily to receive so much as returns to it by the pulmonary veins, the balance between the activity of the circulating and that of the respiratory system is destroyed, accumulation takes place in the lungs, the patient wakes in alarm, and plying his muscles of respiration more vigorously, shakes off the sense of suffocation that was beginning to be imminent.

Patients affected with disease of the heart very generally suffer more or less from uneasiness or positive pain in the region of the organ affected; or they complain of numbness and pain which they refer to the breast, left arm, or side of the neck. They, in a word, suffer more or less from what is called *angina pectoris*.

Few diseases of the heart continue for any length of time, or make the slightest progress, without the general heath of the patient suffering in a greater or less degree. Patients commonly soon become pale and leucophlegmatic, and acquire a distressed and melancholy expression of countenance which there is no mistaking. None of their functions are performed vigorously; and it is easy to conceive that vigorous health of the body at large is incompatible with failure of function in the organ upon which all the parts of the body depend immediately for their supplies of nutriment.

Diseases of the heart are very regularly accompanied with dropsical effusions into various parts of the body. Partial or local at first, these effusions

very commonly become general at last. The infiltration usually attracts attention first in the back or in the lower extremities; but I believe that in the majority of cases the tissue of the lungs is that which is in fact first implicated. So soon as a patient with some irregularity in the action of the heart, or other sign of aught amiss there, begins to be troubled with an habitual dyspnoea and dry cough, careful examination will almost certainly discover him to be affected with œdema of the lungs, upon which these symptoms, in fact, depend. This complication, as M. Gendrin has well observed, is probably to be viewed as the proper point whence all that is most distressing in diseases of the heart takes its rise. The anasarca and hydrothorax and ascites that follow appear to be owing more to the imperfection in the hæmatisation consequent on the affection of the lungs, than to the mechanical impediments to the circulation to which they are commonly ascribed. The dropsical swelling of the extremities, confined to the ankles at first, and perhaps only visible at the end of the day, when the patient has already been many hours in the erect posture, increases gradually till it reaches the knees, the thighs, the scrotum, &c. The abdominal cavity is frequently invaded last of all: it would seem as if there were a means of drainage for serous fluid there, which is wanting elsewhere. Hydrothorax very constantly precedes ascites.

M. Gendrin has lately directed attention to what he calls a "colliquative diuresis, symptomatic of diseases of the heart." The quantity of urine excreted is superior to that of the drink imbibed, and it is during the night that the flow takes place. The urine is pale, and almost always without sediment. Neither heat nor nitric acid give any indication of the presence of albumen. The diseases of the heart in which this colliquative diuresis appears most regularly are those in which there is an impediment to the free passage of the blood by the orifices, especially the left auriculo-ventricular orifice; if some degree of hypertrophy comes to be associated with the disease mentioned, the cases in which the colliquative diuresis is wanting are exceptions to the general rule.

All are familiar with implications of the kidneys and alterations of the uri-

nary secretion in connexion with diseases of the heart of some standing and tending to their termination. Most of us have observed cases, also, in which a patient affected with considerable infiltration of one or both of the lower extremities, coupled with inability to assume the horizontal posture, is at length brought into a state in which he can lie down flat in his bed. In this case he is apt almost immediately to be seized with a diuresis of a very remarkable kind, in which, in the course of 24 hours he will pass ten, twelve, and even a greater number, of pints of urine. I have not myself observed anything like the colliquative diuresis of M. Gendrin in alliance with organic affections of the heart as a general rule. In one instance, indeed, the patient being a female of a highly susceptible nervous temperament, subject to hysteria, and who, at times, certainly did present all the symptoms of angina pectoris in their most strongly marked characters, I have witnessed such a diuresis oftener than once. But here the disease, on the concurring testimony of all who saw the patient, was sympathetic and functional, not organic; a diagnosis the correctness of which is borne out by the fact of the patient's complete recovery from every symptom of heart affection for long intervals, and then having a renewed attack of angina, which could generally be traced to mental emotion, or excitement of one kind or other. The implication of the renal function, which so commonly accompanies organic affections of the heart of some standing, differs entirely from the diuresis described by M. Gendrin. The urine is then generally scanty, turbid, and coagulable both by heat and nitric acid.

The dyspnoea, which is one of the early symptoms in so many of the diseases of the heart, is also among the number of those that continue through their course with the greatest regularity, and that also increase in severity with their progress. It is intimately connected with the occurrence and accumulation of serous infiltration into the cellular interspaces and great cavities of the body. Slight, and only felt occasionally in the beginning, dyspnoea becomes one of the most distressing of all the symptoms that accompany diseases of the heart towards their fatal termination, and is

frequently the immediate cause of the exhaustion and death of the patient at last.

Sanguineous congestions of the great organs of the thorax and abdomen, and also of the brain, are almost invariable consequences and accompaniments of organic diseases of the heart. These congestions are referable to two grand orders: either the heart forces the blood into the organs with greater rapidity than they can transmit it, or the tide in the organs accumulates in consequence of some impediment to its return into the heart. The lungs and brain appear to suffer more frequently than the abdominal viscera, from the direct excessive injecting force of the heart. At the present day we are perfectly familiar with the hæmoptyses and apoplexies that occur along with hypertrophy of the ventricles. In these cases there is, indeed, more than simple congestion; there is positive extravasation of the blood, and death may be the immediate consequence of its occurrence. The hæmoptysis, which is not connected with the suppurating of tubercles in the lungs, is almost always due to preternatural action of the heart, this, in its turn, depending on hypertrophy of the ventricle. It is but a few weeks since I met with an interesting case of hæmoptysis from this cause. The patient, a spare, nervous-looking man of about 40, had consulted me in the morning on account of palpitation and pain in the region of the heart. The action of the organ was violent, the impulse great, and the first sound dull and prolonged: there could be no question about the existence of a considerable hypertrophy both of the right and left ventricles. I ordered rest, abstinence, and some anodyne medicine. (*Tinct. Digital. Purp., Liquor. Opii sedativ. aa. part. equales. Guttæ xx. bis in die capiendæ.*) At midnight I was summoned to the patient, who had been suddenly seized with spitting of blood. I found him cold and shivering. The hæmorrhage had been to no extent, and had now ceased. His hands and feet were put into warm water, and he had a cup of tepid drink. He was covered up warm until the balance of the circulation should be restored. As soon as the chill had passed, the bed-clothes were directed to be diminished in quantity, and forty drops of the anodyne medicine to be given. Next morning

I found that the patient had had a comfortable night. The violent action of the heart, with which he had been long affected, had been greatly increased on the day previous to that on which he consulted me, by some domestic differences.

The kind of hæmoptysis now described is the least dangerous of those that depend on affections of the heart. Here it is probable that there is mere exudation from vessels on the surface of the mucous membrane. It frequently happens, however, that the hæmorrhage takes place into the intimate texture of the lungs, as well as from the mucous membrane—a case in which the affection is spoken of as apoplexy of the lungs. Here, in fact, some portion of the lungs, and often more than one portion at the same time, is so entirely penetrated by effused blood, that the part, when incised, presents the appearance of a firm clot of dark-coloured blood: the entire texture of the lung is lost amidst this coagulated mass. These masses of effused blood are generally pretty accurately circumscribed, but the tissue around them is usually gorged to an extraordinary degree with fluid blood still contained in its vessels, so that when the lung is cut through the blood flows from it upon pressure being made as it would from a sponge. Sometimes, in the middle of the firmer masses of effused blood, the proper tissue of the lung is discovered lacerated,—it seems as if a rent had occurred in the substance of the organ, and given rise to the hæmorrhage. In other instances no solution of continuity can be perceived.

The symptoms of pulmonary hæmorrhage are, dyspnœa coming on suddenly and proving urgent in proportion to the extent of the effusion. There is at the same time pain in the chest, which is accurately referred to a particular spot, or to more than one spot; sometimes it is less pain than a sense of burning and tickling which is complained of. The patient feels that the air as it enters and quits his chest is making its way through a tenacious fluid; he begins to cough, and expectorates blood, which is frothy and florid, if it be in small quantity, but which may be dark coloured and fluid if it be more copiously discharged. He is at the same time very constantly under the influence of

a rigor or shivering fit; his skin is dry and shrivelled; his extremities are cold, and his teeth chatter—the system has received a severe shock.

Hæmoptysis in connexion with disease of the heart is not usually a formidable symptom in itself; that is, it does not often bring the patient's life immediately into jeopardy. It may, however, prove very rapidly fatal. In the great Parisian hospitals I have repeatedly seen cases of hypertrophy of the heart that had terminated fatally and very rapidly by pulmonary apoplexy. It has struck me that this mode of termination was more common in France than in this country. Death in such cases takes place by asphyxia.

Congestion, and even extravasation of blood in the brain, are now recognised as very common consequences of diseases of the heart. Where the action of the heart is violent, as it is in hypertrophy of the ventricles, and where the blood is pent back by the contraction of one or other of the auriculo-ventricular orifices, patients very commonly suffer from obtuse and constant headaches, from heaviness of head, and frequently from drowsiness. The face at the same time is apt to look flushed and full, or otherwise it is bloated and pale, or slightly livid. With symptoms such as these occurring under such circumstances, paralysis or apoplexy is almost certain to become associated before long. These serious diseases are now recognized to be much less regularly primary and independent affections than they were at one time believed to be. They are very often but other and most disastrous evidence of disease in the central organ of the circulation.

When we recal to mind the anatomy of the circulating system of the abdominal viscera, we see that these must almost of necessity suffer at an early period in every affection of the heart. The liver, in particular, with its double circulation, must be extremely apt to feel the effects of any thing like an impediment to the course of the blood through this organ; and such is, in fact, the case. In the majority of affections of the heart, the liver can be felt projecting from under the edges of the false ribs, and extending in various degrees downwards in the right hypochondriac region. Its whole mass is at the same time enlarged, so that it

encroaches upon the cavity of the thorax, and adds to the dyspnœa with which the patient is already affected. Whatever throws an obstacle in the way of the ready transmission of the blood through the heart or the lungs, is very certainly followed by engorgement of the liver. It is rarely, perhaps never, an immediate consequence of any of the diseases of the heart; but it is one of the most ordinary secondary effects of almost every one of these; for the common tendency of all is to occasion an impeded circulation through the lungs, to which succeeds a retarded flow of blood through every organ of the body; the liver first and most especially.

What has now been said in reference to the liver applies to the other abdominal viscera generally. That the stomach and intestines are gorged with blood is made evident by the tension and continued dull gravative pain of the abdomen, which patients affected with disease of the heart so constantly complain of; by the loss of appetite and the disturbance of the digestive functions, the flatulence, &c. &c. from which they suffer.

The kidneys are very commonly affected simultaneously, and the interference with their functions which then ensues is perhaps fraught with more immediately disastrous consequences to the patient than the partial suspension of its office by the liver or the intestinal tract: the urine begins to be secreted in smaller and smaller quantities, and the dropsical infiltration which always accompanies such a state of affairs, increasing more and more, the patient is soon brought to extremities. Were the patient not carried off by the disease of the heart, he would very certainly be the victim of the disease of the kidneys which is then so constantly developed. Granular degeneration of these important organs is a very common accompaniment, and I believe consequence, of organic diseases of the heart.

Causes of the diseases of the heart.

The admirable mechanism of the heart differs from every other machine made by the hands of man, in this, that it possesses an inherent preservative power. Nevertheless, the body of man was fashioned to endure but for a time, and we cannot wonder, when we see those parts of it which are at once

the most delicately constructed and have the most incessant duty to perform, either the most apt to get into disorder or the first to feel the effects of decay. Diseases of the heart were at one time looked upon as rather rare; we now know that they are among the most common causes that bring adult man to his end.

The heart has not only something like ceaseless duty to perform, then, and by reason of this is subject to get out of order, but it feels in a remarkable manner all that impresses the nervous and every other system and organ of the body. None of these can perform any unusual duty which it is liable at every moment to be called upon to discharge, unless supplied with an additional quantity of blood, and this the heart must furnish by more energetic contractions than usual. All the mental faculties in a state of unusual action induce unusual action in the heart. All the mental emotions and passions have the same effect. Efforts of every kind necessarily imply antecedent powerful contractions of the heart, &c.

Certain modes of life predispose to, or occasion, diseases of the heart. Soldiers upon hard service have been held to be particularly obnoxious to such affections. Severe marching, the body loaded with the heavy knapsack and musket, require great and energetic action of the heart to maintain that of the voluntary muscular system which is then implied and indispensable. Youths who indulge in athletic exercises, particularly rowing, have repeatedly been cut off by diseases of the heart. Operating surgeons have been said frequently to suffer from affections of the heart, in consequence of the agitation and feeling of responsibility reflected to the heart, from which their profession is inseparable. Poets, from the excitement which attends indulgence in lofty conceptions, have often suffered from diseases of the heart. Care and anxiety are well-known foes to life, and they are so, in some measure at least, from influencing the heart in its actions: derangements that are merely nervous at first, often end in becoming organic at last.

Prognosis in diseases of the heart.

As physicians have become better acquainted with diseases of the

heart, above all as they have learned to distinguish them at an early period, and have been led, upon the basis of sound physiology, to the employment of reasonable means of treating these important affections, so have they come to see more and more clearly that a very considerable number of them are within the reach of art. The motto of Corvisart's celebrated Essay — *hæret lateri lethalis arundo*—was enough to strike terror into every mind, and almost to induce us to quit the field without a blow for victory. But we have undoubtedly made immense progress in the knowledge of heart-diseases since Corvisart wrote, and in many cases the arrow now flies divested of its barbs, so that it can be plucked out, and yet leave no deadly wound behind. Even where it sticks, and cannot be removed, we have still assurance that much may frequently be done to prolong life, and that in many instances the extreme term may be reached in spite of the formidable ill that had its seat in the core. This subject will be much more aptly treated along with the several special diseases of the heart, a subject upon which I shall next enter.

CASES OF

AMAUROSIS FROM WOUNDS.

By W. CLAY WALLACE, M.D. New York.
(For the *London Medical Gazette*.)

1.—*Case of partial amaurosis from wound over infra-orbital nerves, relieved by dissecting out the cicatrix.*

PATRICK BURNS, æt. 35: stone-cutter. On the 8th of October, he was attacked by several men, knocked down, and wounded over the right foramen infra-orbitarium. The wound gave so little trouble that in two days he went to work. Ten days afterwards the vision of this eye became indistinct, and imagining that the dimness was occasioned by the scab, he picked it off, though without the least improvement. He was soon obliged to abandon work altogether; the sight of the affected eye became so obscure that he could not make out an object, though when the hand was passed across the eye he could tell that there had been something before it.

On the 13th November, when I first saw the patient, I dissected out the cicatrix, which was unusually promi-

ment, and on cutting it open I observed in the centre a small piece of steel.

R Strychniæ, gr. vi.; Alcoholis, ℥ii.;
Acidi Acetici, ʒss.; M. fricentur tem-
pora m. et v. Pilul. Cal. et Colocynth.
2nda q. q. n.

17th.—Wound nearly healed, and vision much improved. He can now observe the fingers; he can, though with difficulty, make out the large characters of a book, and expresses himself relieved from uneasy feelings about the side of the head.

Two months after the operation his sight had remarkably improved, though it had not quite recovered.

2.—*Case of infra-orbital wound of one eye producing total amaurosis in the other.*

John Williams, æt. 25: butcher. On the 8th of November, during an election riot, received, by an unknown weapon, a wound on the right lower eyelid, below the edge of the orbit, and midway between the foramen infra-orbitarium and the tendon of the orbicularis palpebrarum. According to his account both eyes immediately became blind, and he had to be led home. As on the second or third day, after the swelling had subsided, the vision of the right eye was perfectly restored, he thinks that the temporary deprivation of sight was caused by the tumefaction which prevented the opening of the eyelids. Since the injury the left eye has been completely amaurotic; with this he cannot recognize the least ray of light, and is even insensible to the glare from a magic lantern. The iris is somewhat expanded, and totally immovable when the opposite eye is closed, but when both are open its motions perfectly correspond with those of the other. With the exception of the cicatrix under the right, and the total loss of vision in the left, there is no appearance of disease.

With great difficulty I persuaded the patient to allow me to remove the cicatrix, which was found to contain a small foreign body, but by no entreaty could I persuade him to permit me to bring the edges of the wound together by stitches.

Although he promised to return, he never afterwards made his appearance, and I have not been able to find any traces of him.

New York, Feb. 18, 1843.

MEDICAL GAZETTE.

Friday, March 24, 1843.

“Licet omnibus, licet etiam mihi, dignitatem
Artis Medicæ tueri; potestas modo veniendi in
publicum sit, dicendi periculum non recuso.”

CICERO.

LUNATIC ASYLUMS.

M'NAUGHTEN'S CASE.

It is gratifying to the philanthropist to observe that lunacy daily occupies more and more of the attention not only of the physician, but of the jurist and the statesman. The erection of new county asylums, and the amendment of the laws relating to lunatics, are creditable to the age in which we live, and are alike evidences of that anxious desire for improvement, which, though it may not attain perfection, is certain to leave mediocrity far behind. As all that we see around us, as each varied shape of the material world, is but the embodying of an idea, the improvement in the external aspect of lunatic asylums shows the change for the better which has taken place in the theories of insanity. The stern and gloomy aspect of a madhouse of the last century indicated the belief that restraint, seclusion, and severity, were nearly all that insanity could demand; while the cheerful air and architectural embellishments of a modern building are the outward signs of a better creed. They show that it is intended to be an asylum in the best sense of the word; a retreat from the feverish embarrassments of life; a refuge where cares cease to trouble, and where the weary are at rest. Two pamphlets showing the laudable course of the present movement, its right direction, and its ceaseless activity, are now lying before us. The one is by Dr. Harty, and is in the shape of a critique on an Act of Parliament, passed last session, for amending

the law relating to private lunatic asylums in Ireland*.

Its author begins with the grand topic of the day, and ends with it too :

A te principium ; tibi desinet !

Both in his dedication and postscript he touches on M'Naughten's case, and expresses the hope that "a point of judicial law, of all others, perhaps, the most difficult and delicate, should, after due deliberation, be definitively and practically settled in a court of justice."

Unfortunately, the late verdict has turned out the reverse of this hope ; and instead of shedding light on this important subject, has rather, like the tenebrific stars imagined by some old philosophers, involved it in fresh obscurity. It does not appear whether the jury acquitted Mr. Drummond's murderer merely because they supposed his sense of moral right and wrong to be totally perverted, or because they thought him so mad that he did not know the legal punishment of his crime. If they acquitted him for the former reason, their verdict strikes directly at the root of all social government ; for housebreakers and banditti, no doubt, defend their actions by the arguments which romance writers put in their mouths ; and their instinct of right and wrong being therefore plainly extinguished, they should be sent to a madhouse instead of the gibbet or the gallies. Or, to take cases more nearly akin to M'Naughten's, the religious and political fanatics who have in all ages thought to do the state some service by assassinating its heads, the Ravaillacs and the Ankerstroms, ought to have been permitted to wear out their lives quietly in the cells of a

madhouse, were this destructive theory to be sanctioned.

"In 1573," says our great historian, "one Peter Burchet, a puritan, being persuaded that it was meritorious to kill such as opposed the truth of the gospel, ran into the streets, and wounded Hawkins, the famous sea-captain, whom he took for Hatton, the Queen's favourite. The Queen was so incensed, that she ordered him to be punished instantly by martial law ; but, upon the remonstrance of some prudent counsellors, who told her that this law was usually confined to turbulent times, she recalled her order, and delivered over Burchet to the common law*."

What "the common law" did with Peter Burchet, we are not informed ; but it does not require much sagacity to divine the event of the case in such simple times, or to conjecture that he was not sent to Bethlem.

But if, on the other hand, the jury acquitted M'Naughten because they believed him destitute of such a glimmering of reason as enables a man to see the link between murder and the gallows, we have nothing to say against their verdict ; it is compatible with the welfare of society. But mere perversion of the moral instinct, without this utter extinction of common sense, should never save the criminal from his doom. His depravity must not be his excuse ; and neither he nor his friends can complain, that the penalty, which he knowingly braved, is inflicted. He, too, who would subvert a government by violence, plays an awful game, and must submit to all the chances of failure, whether a Brutus or a Guy Faux.

"He threw for a coronet or a coffin," says Colonel Talbot of Fergus Mac Ivor, "and cannot be allowed to draw stakes, because the throw was against him."

We are happy to find that our opinion on the plea of monomania in cri-

* Observations on an Act (5 & 6 Vict. c. 123) "for amending the law relating to private lunatic asylums in Ireland," &c. &c. ; with comments demonstrative of the necessity for an immediate revision of that act, &c. By William Harty, M.D.

* Hume's History of England, Appendix iii.

minal cases is confirmed by the high authority of Lord Brougham; and the same doctrine is explained in the *Examiner* of last Saturday, with all the sparkling clearness of the editor.

We may observe, in addition, that if the unhappy theories of the French writers on this point should be adopted in practice, the insane would be exposed to a new danger. For if a discharged lunatic was considered as a licensed assassin, whose only punishment was a return to his cell, scarcely any length of convalescence could justify the release of any lunatic, far less of a mischievous one. The old maxim of the civil law, *semel furiosus semper præsumitur furiosus*, would be acted upon in all its severity. Before the recourse to such a calamitous remedy, however, it is to be hoped that the good sense of the English people will have discovered a better expedient; and a sufficiently easy one presents itself, namely, that of administering the law in the old style, when depravity was not sheltered under the name of monomania, nor crime protected by an apparent want of motive.

In fine, when punishment is considered as a means of prevention, it is obvious that while the somewhat hurried execution of Bellingham checked this variety of crime for a long period, the impunity granted to M'Naughten has brought out into the light of day a swarm of would-be imitators.

But let us leave this painful topic, and return to Ireland, and Dr. Harty.

Ireland, which is so deficient in too many essentials, is very inadequately supplied with lunatic asylums; and Dr. Harty, in his capacity of physician to the three criminal prisons of Dublin, has had ample opportunities, in late years, of bearing witness to this want. Formerly these prisons seldom contained more than three or four lunatics; but since the assassination of Mr. Sneyd,

and the enactment of 1 Vict. c. 27, magistrates have committed them more largely; and they now contain upwards of sixty lunatics, epileptics, and idiots! County asylums of sufficient size are so plain and necessary a remedy for this flagrant abuse, that it might seem unnecessary to give another word to the subject. Dr. Harty, however, makes a different proposal. The workhouses lately erected in Ireland contain the able-bodied as well as the infirm poor. Let the former, he says, be discharged, and relieved at home, and let the space thus evacuated be filled with incurable lunatics. The asylums will then be able to hold the lunatics who are now thrust into prisons, not only in Dublin, but in other parts of Ireland.

The economists would, of course, object to this alteration, since it would tear up their favourite "test of destitution" by the roots: but a better reason might be urged against it. Few lunatics should be regarded as utterly incurable; and it is clear that their chance of recovery must be greater in a well regulated asylum than in a workhouse. In the former they are under the superintendence of one who devotes his life to the study of their malady; in the latter they would enjoy but a slender share of the attention of the visiting medical officer. The moral treatment of lunacy—the education of the wandering mind—is yet to be discovered; and its study under the most advantageous circumstances must be encouraged. A French philanthropist, M. Seguin, has succeeded in teaching idiot children to read and write; after this, who shall despair?

The Bill, which Dr. Harty criticises pretty sharply, was brought in very late, and passed in a hurry; for it was not printed till the 13th of July, 1842, and received the Royal assent on the 12th of August, the last day of the session. Whether from this legislative

canter, or from the carelessness of the person who revised its details, the Act is full of errors; so that although it was only intended to last three years, Dr. Harty doubts whether its rickety frame will enable it to survive so long.

Dr. Harty points out many of the errors and omissions apparently arising from the race which the promoters of the bill were running against time. Thus, although the English Act, the prototype, contains three oaths of secrecy, its copy, the Irish Act, has but one; and while by the former an oath of secrecy is administered to the Clerk and Clerk's Assistant, as well as to the Commissioners, in the latter the Commissioners alone are sworn.

In England, again, the application for a license must be accompanied by a plan of the house, only when the house has not been previously licensed; but the omission of a few words in the Irish Act subjects proprietors to the trouble and expense of a new plan every year. That this trouble and expense are altogether "unnecessary," as Dr. Harty supposes, we would not too hastily assert. To ask for a new plan *every* year may be unreasonable; but if the English Act says "once a plan, always a plan," that must be wrong too; houses change like men, and even if they have changed for the better, it is well to gratify what phrenologists call "the love of approbation," by affording their possessor an opportunity of publicly recording their improvements.

If we might hint a fault, indeed, Dr. Harty, who is the proprietor of a lunatic asylum, is rather too sidgetty touching the restrictions imposed upon him by the law, and rather too desirous of including doubtful cases under the definition of persons proper to be confined. Thus he would shut up patients labouring under delirium tremens; and, not satisfied with this, laments "the many melancholy instances of the most per-

severingly depraved taste for spirituous liquors in the fathers and mothers of families, or in their adult children," and wants to apply the same remedy to these cases, before they terminate in positive mania, or in delirium tremens. Hitherto, he has never hesitated to receive cases of this kind into his Asylum, provided all the friends and relatives have met, and subscribed a letter requesting that he would take in the tippler for three or six months. At present, however, he thinks that "such humane and beneficial interference can no longer be hazarded," and wishes the legislature to provide a remedy. Now in spite of the labours of Father Matthew, we think that scores of supernumerary asylums might be filled in Ireland, or elsewhere, by admitting all the thirsty souls whose excessive ingurgitation of alcohol alarmed their friends. More lenient measures might be devised. In the State of New York, the property of habitual drunkards is placed under the guardianship of the Chancellor*. In Switzerland, we have ourselves seen an interdiction prohibiting a certain drunkard from being supplied with liquor. If the less primitive manners of our own country allowed of such a plan, most persons would prefer being coldly repulsed from the Fountain and the Bunch of Grapes, to a lodgment in the most comfortable of asylums.

ROYAL MEDICAL & CHIRURGICAL SOCIETY.

March 11, 1813.

THE PRESIDENT IN THE CHAIR.

Some Account of an Hysterical Affection of the Vocal Apparatus. By OSCAR M. P. CLAYTON.

THE author prefaced the detail of his paper by drawing attention to the too frequent generalization in the treatment of hysterical affections, which he supposes chiefly to arise

* Beck's Medical Jurisprudence, 9th edit. p. 453.

from hysterical disease being confounded with diseases occurring in an hysterical diathesis.

The cases, sixteen in number, occurred in two groups: the first beginning in February, 1841, accompanied by well-marked pyrexial symptoms; the second in October last, in which the symptoms were clearly hysterical, and imitative from the first. They occurred in a charitable institution for the maintenance of female children; those attacked were from eleven to fourteen years of age.

In February, 1841, seven of the children were attacked as follows—with a short hacking cough, almost constant, much pain and distress in breathing, no expectoration, pulse quick, hot skin, tongue white, bowels costive. After two or three weeks, during which time these symptoms withstood all the remedies applied, the cough changed to sounds varying in the different patients; in some resembling the double action of a large saw; in another a shrill screaming expiration followed a quick catching inspiratory effort; in another the sound was like that produced by blowing into a small metallic tube. In fact, it is difficult to conceive the dissonance and constancy of these sounds.

Besides these, one girl, aged fourteen, became affected with symptoms exactly resembling those of laryngitis, and requiring the usual means for their removal; but after a week or two the noise above alluded to supervened. In the commencement, sinapisms, blisters, expectorants, and nauseants, were tried in various forms, and subsequently sedatives, alone and conjoined with antispasmodics; but without avail. When the anomalous sounds were established, a combination of hemlock, sulphate of zinc, and quinine, was given, as well as full doses of the sesquioxide of iron. These remedies, however, produced no effect till the children were separated one from the other, when, with the exception of two who were sent home, the patients slowly recovered. The two who were removed speedily recovered, although all required the long-continued exhibition of mineral tonics to remove the very considerable debility that remained.

In the second group, commencing in October last, the dental sounds, *i. e.* inspiratory and expiratory, succeeded almost immediately on the hacking cough, and there were some catarrhal symptoms; on the whole, the hysterical character was well marked.

A considerable number were now attacked; many of those who had formerly laboured under the same symptoms. The uproar became alarming to the neighbours. No remedial means, including turpentine, spiritus, ammonie succinatus, antispasmodics, tonics, mineral and vegetable combined, with the regular use of the shower

bath, being after long continuance found of any use, the author determined to try the effect of mental influence, and following the example of the celebrated Boërhaave, he assembled the children and informed them that he should with a red hot instrument burn the throat of all those who were not well by the following morning. Their fright urged them to escape from the school on the next day, when they ran to their respective homes, and on being collected at the school on the day after were all found well. Two of the elder girls did not escape, and in them the symptoms persisted, and in the others they returned in little more than a week. All other means failing, their throats were blistered with a spatula heated in boiling water, and covered with a silk handkerchief. This with some succeeded; in two others secluded from the rest the affection gradually wore out; but two were at last sent to their homes, where, separated from their noisy companions, they soon recovered.

Case of Erectile Tumor in the Popliteal space, and its removal. By ROBERT LISTON, Esq., F.R.S., Surgeon to University College Hospital.

The patient was a stout healthy looking lad, ten years of age. He had a tumor in the right ham, of an oval shape, about three and a half inches in its long diameter, unattached to the skin, and unattended with pain. It had a doughy elastic feel, giving a sensation when the limb was extended almost exactly resembling fluctuation produced by deeply seated matter. When the limb was flexed this sensation was less perceptible, and it had more the feel of an elastic solid tumor, which was moveable, and could be distinctly raised from the bone. The tumor first attracted attention when the patient was about two years of age. In the course of a year it had increased in size, so as to be nearly of the size of a turkey's egg. Being punctured at this time, with a grooved needle, no fluid escaped. It slowly increased, without occasioning pain or inconvenience, and three years ago a surgeon passed a seton through it, which was withdrawn in a few days, when a discharge had been established. No benefit was gained by this proceeding, or by other measures adopted to reduce its size. The operation for its removal was performed January 6th. An exploratory puncture with a bistoury was first made into the centre of the tumor. This was followed by a profuse discharge of blood, and the swelling somewhat diminished in size. Its surface was next exposed by dividing the skin and fascia; and it was now observed that it had the aspect of a fatty tumor, and was evidently much less in its dimensions than before the commencement of the operation. As the operation was proceeded with

the tumor continued to decrease in size. It was found that the substance of which it was composed was covered by the fibres of the semi-membranous muscle, and, to extirpate it, it was necessary to cut into that muscle. In the course of the operation the tumor had to be followed deeply into the popliteal space; it had to be dissected off from the nerve, and a good deal of blood was lost. Only one vessel required ligature. The wound healed favourably, and the boy was able to walk about the ward on the 16th day from the operation. On making a section of the tumor, it was found to consist of a mass, about the size of a hen's egg, of most perfect erectile tissue. On a microscopic examination, an appearance was visible like that of the muscoli pectinati of the heart; the columns of the reticulated structure being covered with a smooth membrane resembling that lining the inner surfaces of veins. A preparation of the tumor was exhibited. The author adds some observations on the circumstances which were peculiar in this case, directing attention especially to the difficulties occasioned in the operation by the tumor being covered on all sides by muscular fibres, and by the diminution which occurred in its size as he proceeded. He closes his remarks by offering the opinion, that the tumor was developed in the substance of the muscles with which it was connected. Another case is appended, where the author removed a tumor of a different structure from the side of the neck; and where he was of opinion that the morbid substance originated in the interior of the sterno-cleido-mastoid muscle. A drawing of this tumor was shown.

FELLOWS' CLINICAL PRIZE REPORTS.

By ALFRED J. TAPSON.

University College Hospital, 1842.

[Continued from page 880.]

CASE VIII.—*Colica pictonum, marked by severe pain in the abdomen, obstinate constipation, blue line along the margins of the gums, &c.; cured by combinations of purgative and narcotic remedies, alum, &c.*

JOHN HALLIDAY, ætat. 30, admitted June 13, 1842, under Dr. Williams. A short muscular man; ruddy complexion, and sanguine temperament; is a native of Scotland, but has been living in London for some time; he has been a painter ever since he was 14 years old; has no hereditary predisposition to disease; habits tolerably regular; drinks two or three pints of beer daily, sometimes a little more. His health

has always been good; was never laid up with any illness, except about three years since, when he had an attack similar to the present, which obliged him to keep in bed for a month; he was treated by leeches, purgatives, and injections; after the attack he says, about half a pint of blood was discharged by stool. This attack was attributed to his having taken his meals in a white-lead manufactory, where he was then working, without washing his hands. Since this period his bowels have never been regular without taking medicine occasionally, but he has never had any pain since; never had any weakness of the limbs, dropping of the wrist, &c., and the muscles are well developed; never had rheumatism, pain in the chest, cough, &c.

For several weeks, ending June 4th, he had been working at flatting, and on the evening of the 4th he drank about three-quarters of a pint of gin; the next morning he felt a sensation of weight about the umbilicus, followed by a gnawing pain, and this gradually became worse, especially at times; he however continued to work till the 10th instant, and during this time was employed in a very close house, and drank some very "hard" beer. His bowels were opened very slightly on the 6th and 8th, but with these exceptions they have not been opened since he was taken ill, although from the 8th he has been taking various purgative medicines, pills, mixtures, jalap, &c. Has not been sick, except once yesterday evening after drinking some warm beer, with the view, he says, of making the jalap operate.

Present symptoms.—The skin is cool, and perspiring freely; complexion rather sallow about the eyes and forehead; countenance anxious; brows contracted, &c. He complains of a severe griping and twisting pain all over the abdomen, but most severe just above the umbilicus; it is relieved by firm pressure, and he feels most easy when he lies on his back, with his legs drawn up; there is no hardness, enlargement, or increased tension of the abdomen; no headache; the respiration and heart's sounds healthy; pulse 76, regular, rather small, not hard; tongue moist, and covered with a yellowish fur, especially at the back part; the gums have a bluish tinge along the margins, and there is a sort of greyish deposit in this situation; appetite moderate; thirst not considerable.

8 o'clock, A.M.—Habeat Enema Purgans.

12 o'clock.—Repetatur Enema Purgans.

Each of these brought away a little fecal matter.

3, P.M.—℞ Calomel. gr. viij.; Opii Pulv. gr. ½. ℥i. pil. statim sumend.

℞ Ol. Ricini, ℥j. Cras mane sumend.

In the evening the pain in the bowels was very severe, and he was ordered to have hot fomentations applied, and to take the following draught:—

℞ Ol. Ricini, fʒj.; Tinct. Opii, ℥xxx.;
Aq. Menth. pip. fʒss. ft. haust.

June 14th.—The pain is rather easier this morning, but is very bad at times. Pulse 64, compressible.

9 A.M.—℞ Ol. Ricini, fʒvj.; Ol. Crotonis, ℥j.; Aquæ Menth. Mist. Acac. aa. fʒiij. ft. haust. statim sum.

This opened the bowels once freely about noon.

3 P.M.—The abdomen is not enlarged or knotted at all, but feels rather too resistant in some parts, especially round the umbilicus.

The sound on percussion is tympanitic above the margins of the ribs on the right side, in the region of the liver, and the pulmonary resonance extends quite as far down as usual on this side. The pain is less. The countenance flushed a little.

℞ Calomel. gr. v.; Ext. Belladonnæ, gr. j. ft. pil. horâ somni sumend.

℞ Ol. Ricini, fʒj. cras mane.

15th.—The pain has been extremely violent all through the night; he had the hot fomentations again, but without relief; he is easier again this morning. Pulse 104. Bowels not opened since yesterday at noon. Urine scanty; one pint in twenty-four hours; high coloured, and containing a copious red sediment, dissolved by heating or adding nitric acid.

Statim Sumat. Ol. Ricini, fʒiss.

16th.—The pain returned again last evening with as much violence as ever. The bowels were opened two or three times last night, and once this morning. The stools were watery and dark coloured, and contained some scybala. Urine more abundant.

℞ Ext. Belladonnæ, gr. vj.; Alum. Sulph. ʒij.; Aq. Menth., Mist. Camph. aa. fʒiij. M. ft. Mistura. Sum. Cochl. ij. magna 4ta quaque hora.

17th.—The pain was severe again last night, and continued so till 5 o'clock this morning, after which he slept for some hours. Pulse 120, rather sharp. Bowels opened once freely in the night. Urine scanty; sp. gr. 1025; contains no excess of the sulphates.

Statim sumat. Olei Ricini, fʒj. et repetatur post horas tres si opus sit. Fiat Mistura cum Ext. Belladonnæ, gr. viij.

18th.—The castor oil had no effect on the bowels. The pain was very bad again last night in the same situation as before. Since yesterday afternoon he has had some dimness

of vision, as if a mist were before his eyes; the pupils are both dilated; the tongue is more coated; the gums are dry, and he is very thirsty. Urine scanty.

℞ Olei Crotonis, ℥ij.; Ext. Belladonnæ, gr. j. Mic. Panis q. s. ft. pil. Statim sumenda, et omni bihorio ad tertiam vicem repetenda. Sumatur misturater die tantum. Vespere nisi prius solutus fuerit alvus injiciatur Enema Terebinthinæ.

20th.—He took all three doses of the croton oil, &c. on the 18th; and a few hours after the last the bowels were freely opened three times. The stools were light-coloured and watery—not lumpy. The pain was easier before the bowels were opened, and afterwards there was very little pain left, and he has had no return of it since. There is a slight superficial tenderness over the lower part of the abdomen, but this is due, he thinks, to the hot fomentations, &c. Feels stronger and better; pulse 80, natural; appetite returning; tongue less furred; pupils still dilated; urine much more abundant, natural.

Repetantur pilulæ ut antea.

21st.—He took the pills in the same way as before; and four or five hours after the last dose they opened the bowels several times. He looks much better, and says he is quite well, only rather weak; has no pain at all; pulse natural; the blueness of the gums has almost disappeared; the tongue is nearly clean; appetite good; urine free; pupils both dilated, especially the left.

Omittantur Medicamenta.

22d.—The sound on percussion is natural over the abdomen. The dulness of the liver reaches to the margin of the ribs. No dimness of vision left. Bowels still freely open, and he makes plenty of water.

23d.—Sleeps well; is quite recovered; bowels regular, &c. Discharged cured.

REMARKS.

Diagnosis.—The case was clearly one of colica pictonum. It was characterized by a constant gnawing and griping pain in the abdomen, especially about the umbilicus. The pain was increased very much in paroxysms, was relieved by firm pressure, and, like almost all abdominal pains, was easiest when the patient was lying on his back, with his legs drawn up. There was obstinate constipation, slight sickness, thirst, and anxiety of countenance; no feverishness (skin cool and moist, pulse moderate); the complexion was rather sallow, and there was a blueish line along the margin of the gums, with a sort of greyish deposition between this and the teeth; the abdomen was not knotted, as is generally the case, nor was there much increased tension or hardness;

there was some about the umbilicus, and the tympanitic sound was found to rise one or two inches above the margins of the ribs on the right side: this is frequently the case in painters' colic, and arises from the presence of an increased quantity of gas in the intestines, which are thus forced in front of the lower border of the liver, and do not displace it upwards, as we might have rather anticipated would have been the case; for it was found that the dull sound of the liver did not rise at all above the usual height, and at a subsequent examination the dullness reached to the margins of the ribs as usual.

It could not be confounded with either enteritis or peritonitis; for the pain was relieved by firm pressure, there was no fever, and also from the circumstances under which it came on. It could not be colitis, because of the situation of the pain, and the existence of constipation, and not diarrhoea, &c. It was therefore colic, and that particular kind of colic which arises from lead in the system, as proved by the more gradual accession of the pain than in ordinary colic; it being at first dull, and afterwards more intense; also the blueness of the gums, and the apparent cause.

What was the *cause* of the colic? Considering the nature of his employment (house-painter), there could be little doubt that lead was in some way or other the cause; and the blueness of the gums may be regarded as a proof that his system was under the influence of lead. How does the lead get into the system? It is almost certain, notwithstanding the arguments of Tanquerel to the contrary, that there are three ways in which this may occur; and when once it has entered, it may produce its effects on the economy, which vary according to circumstances—sometimes colic, sometimes paralysis of motion or of sensation, sometimes neuralgia, &c. The first mode of introduction is absorption through the skin: this mode is denied by Tanquerel, but there is a case in the hospital at this time (July 1842) which seems to prove it; for without this patient having had colic, &c. he has paralysis of the head and arms*. If it entered the system through the lungs with the air, or through the intestinal canal with the ingesta, how came it to produce no effect on those parts, but to paralyse the hands and arms? To explain this in any other way than absorption through the skin, and local action on the nerves, we must adopt some more violent assumption than this; as, that there is a certain directing power in the system, which conducts the lead, after it has entered the circulation, to the muscles of the forearms, &c. The second mode is by being carried

into the lungs in a state of fine particles, and there absorbed and carried into the circulation. The third mode is by being taken into the alimentary canal with the ingesta, and absorbed with these, &c.

In the present case the second appeared to have been the chief mode of introduction; for we find by the history that he had for several weeks immediately preceding the attack been engaged in flattening, *i. e.* painting rooms of a dead white colour, in which turpentine is used in the paint instead of oil, and from its volatility the particles of lead are diffused through the atmosphere in the room, which is kept closely shut up all the time. This kind of painting is well known to be more likely to cause colic than any other. Probably other causes also assisted in producing it here: thus we find that he had an attack about three years before (when, by his account, it was produced in the third mode, he having been working in a white-lead manufactory, and been careless enough to eat his meals without washing his hands); and this had left a costive state of the bowels; so that, independently of the predisposition left by the disease to the reproduction of itself, there was here an actually exciting cause of colic. Again, the night before the attack commenced he drank three-quarters of a pint of gin, besides his daily allowance of beer; and of all the exciting causes of colic, none perhaps is more common, or more powerful in its operation, than intemperance. Tanquerel states that he has, "in a good many cases, seen the disease shew itself on the morrow, or even the second day, after a debauch." And, lastly, after the attack had commenced slightly, it appears that he continued his work for a few days in a close and dusty house, and drank pretty much very hard beer: this probably contributed to render the attack more severe than it might otherwise have been. The patient does not appear to have suffered from any other effect of lead than the colic; neither paralysis nor neuralgia.

Next as to the *treatment*.—What were the indications? The first undoubtedly was to procure a free passage through the bowels; and, before attempting to describe the most appropriate means, we must ascertain what is the cause of the obstruction. Is it a simple accumulation of feces from deficiency of the secretions of the alimentary canal, or is there a paralysed or a contracted state of the intestines to cause the accumulation? In most cases, no doubt, there is accumulation of feces caused by one or other of the two latter states, and there are different opinions as to which of the two it is. Tanquerel states that in a great many cases the rectum was found so firmly contracted that it was almost impossible to introduce the finger;

* This case will be reported in a future number of the MEDICAL GAZETTE.

but there are many reasons in favour of Abercrombie's opinion that the accumulation depends on paralysis of the muscular fibres of the intestine: this opinion is strengthened by the action of lead on other parts of the body, as in the arms, where the muscles are paralysed as to motion, but sensation remains perfect, and it is also confirmed by the action of certain remedies, as alum, &c. It is of the less importance to determine whether the obstruction depend on spasm or paralysis, as in either case the use of narcotics is indicated: thus, if it depend on spasm, an antispasmodic, as opium or belladonna, by relieving the spasm will remove the obstruction; and, on the other hand, if it depend on paralysis, it is attended with great pain, which, by irritating the adjoining parts of the intestine, will cause spasm there, and thus increase the obstruction, and consequently the pain should be removed if possible; therefore, give either opium or belladonna: the latter possesses one great advantage over the former in these cases, viz. that it produces its narcotic effect without tending to increase the constipation.

With the narcotic we must conjoin a purgative, and the best of all is calomel, commencing with a large dose, and following this by smaller doses with castor oil, or if necessary with croton oil.

In the present case the treatment was commenced with a purgative enema; this was repeated in four hours; three hours after calomel and opium were given, and a few hours after, again castor oil and opium, all with very little apparent effect: hot fomentations gave some relief. The 2d day castor oil and croton oil in the morning, which opened his bowels once freely, and calomel, belladonna, &c. at night. The 3d day he took two doses of castor oil, which opened the bowels two or three times, and brought away a lot of scybala. The 4th day, the pain still remaining very severe, belladonna and alum were given every four hours, and this gave him more ease than anything hitherto administered, and opened the bowels once freely. The 5th day, the pain having increased, the quantity of the belladonna was increased. The 6th day, the belladonna and alum were given less frequently, but pills containing belladonna and croton oil were given every two hours for three doses, and these relieved the pain and opened the bowels well in a few hours, and the pain did not return again. On the 8th day the same pills were repeated, as a measure of precaution and to ensure the success, and this was the last medicine he took. On the 10th day he was discharged cured.

The duration of the case was about the average time in cases of similar severity, rather under than above it. It proves very distinctly that it is not a simple accumu-

lation of feces that produces the symptoms, for in that case it would be sufficient to cause free purging once, but here the pain returned again and again after the bowels had been well purged several times, and it was not until this had been frequently repeated that permanent relief was obtained, and we may reasonably believe that by this means the second indication is fulfilled, viz. the elimination of the lead from the system: we find by the reports that the blueness had almost disappeared from the gums at this time, and that his system was quite under the influence of the belladonna, the pupils dilated and vision interfered with: altogether he took about twenty-five grains of the extract of belladonna in seven days.

Amongst the remedies administered was alum: this was first recommended by the Germans: it generally acts in the first instance as a purgative, although its properties are decidedly astringent, and the only plausible explanation of this is that it counteracts the paralysis which Abercrombie believes to exist, and thus enables the intestines to act. It also is stated to act chemically, in consequence of containing a good deal of sulphuric acid which converts the lead into an insoluble sulphate; but in such a case as the present, where the disease was produced, as we believe, by the inhalation of the vapour of lead, no antidote of this kind is likely to be of much use. We may mention here, incidentally, that the quantity of the sulphates was not increased in the urine after taking this remedy; at all events they were not more abundant than in healthy urine.

There was nothing remarkable in the case itself; it presented the usual features of lead-colic, and amongst these there was the blue line on the margins of the gums, and the deposit between the gums and the teeth; which depend, probably, it is said, on the lead pervading the system, and being in these situations converted into a sulphuret by the action of the saliva and air, &c. It is well known that lead does pervade the different textures of the body, having been detected in the intestines, muscles, brain, &c. after death. We are not aware whether the mucous membrane of the large intestine has been observed to be tinged of a similar colour to the gums, as we should expect that it would be, from the presence of sulphuretted hydrogen in it, if the above be the correct explanation of the colour seen in the gums.

The *prognosis* is always favourable in cases of lead colic which are not complicated with any other disease, as it is very rarely fatal. The result has been already mentioned.

CASE OF BRIGHT'S DISEASE,

WITH POLYPOUS CONCRETIONS IN THE
RIGHT AURICLE, AND EXTENSIVE AD-
HESIONS OF THE PLEURA ON THE LEFT
SIDE OF THE CHEST.

By JOHN PERCY,

[Concluded from page 905.]

THIS urine frequently contained a minute quantity of red particles, which were deposited after the lapse of a few hours. By the microscope, colourless globules, and small irregular fragments of epithelium, were readily detected. I could not satisfactorily decide concerning the structure of these globules, some of which appeared to contain each another globule. Urea was readily separated by the addition of nitric acid to the evaporated urine, and was present only in small quantity. Dark-coloured crystals of uric acid were deposited after the addition of acetic acid. A day or two after evacuation this urine evolved an extremely offensive odour, approximating to that of sulphuretted hydrogen. Towards the last, however, this offensive odour was not observed, and the urine was passed transparent.

In a case of Bright's disease, which I have now under treatment, I have carefully examined the urine with one of Powell's microscopes (which I was kindly permitted to use by its owner, Dr. Blakiston), and I have also clearly seen comparatively large and irregular globules. I am happy, therefore, to confirm the observations which Dr. Bird has published upon this subject in Guy's Hospital Reports.

OBSERVATIONS.—The interest of this case consists principally in the presence of true polypous concretions in the right auricle. Frequently concretions of this kind contain purulent matter in the centre. Although they had not a properly organized structure, yet, as I have already remarked, they had evidently existed during a considerable period before the death of the patient. It is possible that the fibrinous layer, extending through the tricuspid valve, might have been formed subsequently to the rounded concretions, and have occasioned in great measure the extreme aggravation of symptoms towards the termination of the case. The boy, it will be remembered, always referred his disease to an affection of the heart, which, however, I frequently and carefully examined, without being able to detect any decided evidence of organic disease. From the general dulness on percussion of the left side of the chest, extending higher posteriorly than anteriorly, the absence of resonance, and the fixed condition of this side during inspiration as well as expiration, I was induced to conclude that

effusion, limited by adhesions, in the cavity of the left pleura, was present; and probably this conclusion was not unfounded, for signs of recent pleuritic inflammation on the left side were discovered in the post-mortem examination. The gradual diminution of the dulness, and restoration of the respiratory murmur on this side, which occurred in the progress of the case, serve also to strengthen this conclusion. The epistaxis and severe dyspnoea, which preceded the fatal termination, may probably be satisfactorily explained by the appearances presented by the right side of the heart. The pulse always maintained the same character of rapidity and feebleness. The treatment, it will be seen, had reference to the diseased condition of the left side of the chest, to the removal of the anasarca, and to the improvement of the general health. The patient had always had delicate health, which, in a certain degree, he inherited from his father, who still survives. A sister also, who is a miserable decrepid dwarf, is yet living.

CASE OF ALBUMINOUS URINE AFTER POI-
SONING BY CORROSIVE SUBLIMATE.

Sarah Field, single, about 17 years of age, was brought into the Queen's Hospital at 8 p.m., Sept. 21, 1842. It was stated by her relatives, as well as by herself, that an hour ago she had taken arsenic, with a view to self-destruction. I saw her half an hour after her admission, when she laboured under the following symptoms:—The lower lip was considerably swelled, and saliva flowed copiously; the cheeks also were swelled, shining, and tense; she could not protrude her tongue; the countenance was flushed; she complained of burning pain in her throat, and of a coppery taste; the pulse was small and extremely feeble, and the extremities were clammy and cold; there was slight tenderness on pressure in the epigastrium, but she made no complaint of pain in that situation. It occurred to me that these symptoms more nearly resembled those of poisoning by corrosive sublimate than those of poisoning by arsenic. Accordingly inquiry was immediately made of the druggist from whom the poison had been purchased, and it was ascertained that corrosive sublimate was really the substance which the patient had procured. She mixed thirty grains, in coarse powder, with water in a t.a-cup, and immediately afterwards swallowed the liquid. A considerable quantity of the powder remained in the cup. It appeared that she and other members of her family were engaged in the manufacture of hooks and eyes, and that corrosive sublimate is employed in the process of silvering these articles. Vomiting soon followed the taking of the poison, and before she arrived at the hospital had again been induced by an

emetic. After her admission hydrated sesquioxide of iron was given; and as soon as information was received that the symptoms of poisoning were occasioned by corrosive sublimate, and not by arsenic, the albumen of eggs was freely administered. A diffusible stimulant was prescribed, and hot applications were made to the feet. At thirty-five minutes past nine she passed two quarts of pale urine; and at twelve she again voided a pint and a half of the same kind of urine. Pulse 120, feeble. I saw her at this time, when the symptoms were in all respects similar to those previously described.

Thirty-five minutes past one, A.M.—She has had one stool, without pain or tenesmus. She complains of giddiness and headache.

After this, reaction supervened. Leeches were applied to the throat on the following day. Linseed tea was ordered for common drink. The patient continued rapidly to improve, and in a few days left the hospital convalescent, a portion of the mucous membrane of the fauces having separated by slough.

The specific gravity of the pale urine, passed during the first night, was 1009°. Slight turbidity was occasioned by heat, but was instantly removed by nitric acid.

For several days afterwards her urine contained a considerable quantity of albumen, which, however, disappeared before she was discharged from the hospital. One specimen presented the following characters:—It was turbid, and had a pale brown colour; its odour was urinous; sp. gr. 1028°; it was abundantly coagulated by heat, as well as by nitric acid.

OBSERVATIONS.—From the manner of mixing the corrosive sublimate, and from the history of the symptoms, it is certain that only a very small quantity, if any, of the poison was received into the stomach. Its effects were principally confined to the throat and fauces. The severe tenesmus which is reported generally to follow poisoning by corrosive sublimate was not present in the case of Field. The rapidity with which salivation was effected is remarkable. She took the poison at 7 P.M., and when I saw her, between 8 and 9, the saliva was flowing profusely. Albumen has frequently been detected in the urine in similar cases. It appeared to me possible, that its presence in this excretion might, in some way or other, be connected with the large quantity of albumen given as an antidote. This conjecture, however, was not substantiated by experiment; for Mr. Webb, one of the resident medical officers of the hospital, swallowed at my request the whites of twelve eggs, without discovering afterwards a trace of albumen in his urine.

ON THE BLOOD AND FIBRE.

To the Editor of the Medical Gazette.

SIR,

As Dr. Martin Barry has noticed in the *Lancet* some observations I made, in the *Annals Magazine of Natural History*, on the blood and fibre, I shall feel obliged by your inserting in your valuable journal an extract from my paper relating to these subjects, with one or two observations.—I am, sir,

Your obedient servant,

J. W. GRIFFITH, M.D. F.L.S.

Extracts from my original paper, mentioned above:—

“1. Through the kindness of Dr. M. Barry I have examined his preparations exhibiting the interlacement of double spirals; but although the appearance presented in one or two of them is exactly similar to that which would be seen when a fibre formed in the manner described by him, and of the same size as his, was examined under the microscope, nevertheless there are one or two points which strongly militate against the idea of their being really double spirals. In one beautiful preparation made by Professor Sharpey from the tadpole, the upper portion of one of the fibrille exhibited an apparent interlacement most distinctly; so much so, that I am sure no prejudiced eye even could have viewed this alone without coming to the conclusion that it was formed in the manner described by Dr. Barry; but, upon viewing the fibre lower down, the interlacing appearance was replaced by that of a rope, wherein the fibres all took one oblique direction, leaving spaces between them. When this lower part was carefully brought in and out of focus, at first the oblique portions of fibre above described were seen, but afterwards no alteration would bring into focus the posterior portions of the coil, which satisfactorily convinced me that they were really not spiral fibres. When we examine spirals, however minute, from vegetables under the microscope, we can first bring into focus the upper portion of the coils, and then, by depressing the object-glass, distinctly perceive the lower; but in the case of the specimen spoken of this could not be done. I cannot help believing, that in this lower portion the fibre really has separated into discs, whose edges give the peculiar rope-like appearance; but I cannot explain the cause of the peculiar appearance of the upper portion. The fact of the fibres of muscles splitting into discs is, I think, a proof that they cannot be spirals. To break up into discs, the fibrille must be weaker in one portion than another, and I have no doubt this weak part is opposite the

dark line on the fibrils, where they are thinnest; but I do not believe the fibrils are beaded; I think they are merely transversely thinned opposite the dark portions, and that the beaded appearance is an optical illusion."

"2. The appearances observed by Dr. Barry in the blood are, I think, totally misinterpreted; and I am happy to find Dr. Willshire comparing the fibre of the blood-disc to a dark line on a piece of starch, for I am convinced that it is not a fibre at all. I believe the appearance alluded to is, in all cases, produced after the vitality of the blood is destroyed, and is dependent on physical causes alone for its production. The blood-discs are sacs, containing the colouring matter of the blood and a liquid, which is most probably the same as the liquor sanguinis. Dr. Barry says, 'the filaments may be discerned without any addition whatever, *if the coagulation has begun*, provided its appearance be familiar,' &c. I believe that the sac is generally cracked at the time of the production of the fibre, and the contents coagulated, either by the causes producing the ordinary coagulation of the blood, or by the imbibition of a portion of corrosive sublimite, when that is used."

I leave the reader to judge whether the description of the fibre in the blood corpuscles, given by me, is sufficient to authorize any one to give an opinion as to whether I have seen it or not. I believe that the consideration of the abstract appearances presented by objects under the microscope serves very often rather to call forth the powers of the imagination as to what might cause such appearances, than as the means of making out the real structure of bodies: and, in examining different structures, we ought to avail ourselves of the assistance of all the means of investigation in our power—as dissection, chemical agents, heat, maceration, &c. Were these made use of in all cases, I feel convinced we should arrive at more satisfactory and less discrepant results. Now the effect of maceration in the case of muscular fibre convinces me that no such arrangement as that of a double spiral can exist; otherwise why do we have the separation into discs? This has been accurately figured and described by Mr. Bowman, and every microscopist must have seen it. As regards the formation of the tissues of the body from the blood corpuscles, there seem to me insuperable difficulties in these views. In addition to the majority of the appearances which have been observed in the blood having occurred *after the blood has left its vessels*, in many cases *they have been seen taking place*, under the microscope, in the blood removed from the body. Can these

appearances be called vital? Have we any right to believe that they take place in the living body? Moreover, where do these *forming or perfected fibres*, &c. pass through the capillaries? And how is it we do not find in certain cases fibres, epithelium cells, &c. existing in the arteries, veins, or capillaries?

I must say, however, that no views have been yet advanced which will explain some of the appearances presented by muscular fibre. Some of those which have been figured by Dr. Barry certainly cannot be explained on the views advanced by Mr. Bowman; although I believe the appearance figured by him, in the new Cyclopædia of Physiology, to be the real structure of the muscle in its ordinary form.

Dr. Barry cannot, I feel convinced, imagine, that I am exceeding the bounds of propriety in publicly noticing what he was kind enough to show me in private. Feeling assured that his object is no other than the advancement of science, I can only say that I have no other motive; but advance these objections to his views with the idea that it is the duty of every one who has the opportunity to throw his mite into the common heap; and that the opposition of any theory will either bring forward evidence explaining the difficulties, and thus fixing truth on an immovable basis, or bring up some new views, by means of which the old difficulty will be solved, and the same truth irresistibly founded.

NEW OPERATION.

PROFESSOR MOTT requests me to mention to you, that he has lately performed a novel operation, for the removal of a large fibrous tumor from the nasal cavity of the left side, a description of which will be drawn up for publication in the April number of your Journal. The operation consisted in making an incision through the soft parts, commencing a little on the mesial side of the internal angular process of the os frontis, and extending downwards to the upper lip, which was divided at about three lines from the angle of the mouth. Two flaps were then reflected, the internal including the cartilaginous parts of the nose, and the tissues covering the os nasi of the left side; the external laying bare the bone as far as the infra-orbital foramen. The anterior part of the tumor was now somewhat more distinctly seen, and the nasal cavity was farther exposed by sawing, vertically, through the os nasi as far as the transverse suture, so as to avoid the descending plate of the ethmoid. The superior maxillary bone was now divided in a line from the upper part of this cut to a

point opposite the second bienspis tooth, and on a level with the floor of the nostrils. Another section was made from the termination of the last, extending horizontally inwards towards the vomer. The osseous parts, comprising the os nasi, a considerable portion of the superior maxillary bone, and the os spongiosum inferius, were then detached. The connections of the tumor were partially separated, but the disease was so extensive that a part had to be removed through the anterior opening before the posterior attachments could be liberated. These having been detached, the larger portion of this extensive disease, which passed into the pharynx and plugged up completely the posterior nares was removed by introducing through the mouth a large curved vassellum, and forceps, and seizing the mass as it descended into the pharynx.

Within the last week I have seen in the LONDON MEDICAL GAZETTE, a case related by Mr. Earle, in which he attempted to remove a malignant tumor from the nasal cavity by cutting away a portion of the nasal bone with Liston's forceps, after dividing the nose in the mesial line, but his patient died, and neither in result nor performance can his operation be said to resemble that of Professor Mott. One of the chief objects which Dr. Mott had in view in the projection of his operation was, the removal of so much of the bones as would facilitate the entire detachment of the inferior spongy bone from which malignant growths frequently commence, and this last successful surgical procedure of the celebrated Professor must be ranked as one of the modern and important improvements in operative medicine, for the exsection of morbid structures, which, if allowed to remain, would inevitably prove fatal to those thus affected.—Dr. Carnochan, in *American Journal*.

BOOKS RECEIVED FOR REVIEW.

Observations on the Extraction of Teeth. With Plates. By J. Chitty Clendon, surgeon-dentist.

Derangements, Primary and Reflex, of the Organs of Digestion. By Robert Dick, M.D.

A New Theory and Treatment of Disease, founded upon Natural Principles. By John Tinnion, M.D. Ay.

Animal Magnetism: being the first part of Animal Magnetism and Homœopathy. By Edwin Lee, Esq.

Remarks on Medical Reform, in a second letter addressed to the Right Hon. Sir James Graham, Bart. &c. By Sir James Clark, Bart. M.D. F.R.S. &c.

ROYAL COLLEGE OF SURGEONS.

LIST OF GENTLEMEN ADMITTED MEMBERS.

Friday, March 17, 1843.

P. Hubbert.—T. A. Warren.—W. Williams.—T. Hawkins.—P. A. Boyle.—J. B. Davis.—J. Allan.—J. R. Pope.—J. P. Jenkins.—J. S. Nott.—J. H. Coveney.

A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, March 11, 1843.

Small Pox	11
Measles	10
Scarlatina	21
Whooping Cough	49
Croup	4
Thrush	6
Diarrhœa	4
Dysentery	3
Cholera	1
Influenza.....	1
Typhus	55
Erysipelas	3
Syphilis	1
Hypochondria	0
Diseases of the Brain, Nerves, and Senses ..	162
Diseases of the Lungs and other Organs of Respiration	365
Diseases of the Heart and Blood-vessels	29
Diseases of the Stomach, Liver, and other Organs of Digestion	55
Diseases of the Kidneys, &c.....	8
Childbed	6
Ovarian Dropsy	0
Disease of Uterus, &c.	3
Rheumatism	3
Diseases of Joints, &c.	2
Ulcer	1
Fistula	1
Diseases of Skin, &c.	2
Diseases of Uncertain Seat	113
Old Age or Natural Decay.....	101
Deaths by Violence, Privation, or Intemperance	20
Causes not specified	0

Deaths from all Causes.....1040

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude 51° 37' 32" N. Longitude 0° 3' 51" W. of Greenwich.

March 1843.	THERMOMETER.	BAROMETER.
Wednesday 15	from 42 to 53	29.70 to 29.89
Thursday . 16	45 53	29.92 29.96
Friday . . 17	30 59	29.85 29.80
Saturday . 18	30 61	29.79 29.83
Sunday . . 19	33 49	29.84 29.80
Monday . . 20	38 59	29.64 29.47
Tuesday . 21	43 58	29.46 29.42

Wind variable, E. and S.E. prevailing.

Weather since the 16th generally fair; rain on the 15th and 21st.

Rain fallen, .24 of an inch.

CHARLES HENRY ADAMS.

WILSON & OGILVY, 57, Skinner Street, London.

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END OF VOL. XXXI.

EXTRA-LIMITES.

ON EARLY CORPORA LUTEA,

IN ANSWER TO DR. LEE.

To the Editor of the Medical Gazette.

SIR,

IN the number of your journal for Dec. 9, I was induced to trouble you with a few remarks on the subject of early corpora lutea, in answer to some criticisms of Dr. Lee.

In that letter I took occasion to show that the corpora lutea which I have described corresponded precisely to the description of the true body as given by Dr. Lee himself, and that their true nature was further borne out by the testimony of the uterus of one and all of the cases containing a true decidua, which decidua possesses the microscopic structure and other marks recently pointed out by Waller in Germany, and Sharpey and others in this country, as being characteristic of this structure.

My attention, however, has again been called to Dr. Lee's rejoinder, published in your journal for December 16, which letter I am only induced to take notice of that my silence may not be construed into acquiescence in Dr. Lee's conclusions—conclusions which I shall show can alone be arrived at from a perverted account of the case to which he refers.

Dr. Lee's letter refers to three points, which it is necessary for me very shortly to notice.

First, the true or false nature of the corpus luteum which was found in the ovary of the lamplighter's wife.

Second, the true state of the corpus luteum represented at fig. 4 of my paper.

And third, the value of the structure which has been described as characteristic of true decidua membrane.

First, then, Dr. Lee quotes the greater part of the case of this lamplighter's wife as given by myself, and adds, "It is inferred from this singular history, although no ovum nor any vestige of an ovum could be detected on the most minute and careful examination, neither embryo, vesicula um-

bilicalis, amnion, nor chorion, that this murdered woman was pregnant, and that she was an adulteress. Not only is the pregnancy considered a fact of absolute certainty, but the red clot of blood in the ovarium, which does not present one of the characteristics of a true corpus luteum, into the composition of which there does not enter one particle of yellow matter, is described as a corpus luteum a very short time after the rupture of the Graafian vesicle and escape of the ovule."

This all appears very plausible. No ovum nor vestige of an ovum was found, but the uterus was enlarged, and contained a characteristic decidua membrane; the ovary was enlarged, and presented externally a prominent purple-coloured body.

Dr. Lee, in his laudable zeal for the character of this lamplighter's wife, says that this purple coloured body was nothing but a clot of blood; and, strange as it may appear, although he has nearly quoted the whole case, he leaves out the most important sentence (at least as regards the corpus luteum), viz. the description of the section of the ovary. I shall leave you, Mr. Editor, and your readers, to judge what can have been Dr. Lee's object in quoting the whole case and omitting the following most important sentence. "The external margin of the section of the corpus luteum was of an intensely dark colour, thicker, however, on one side than on the other. The internal membrane, which was of a bluish colour, and partially filled with blood, was irregular in its shape, and between it and the dark external margin formerly mentioned the substance was of a brighter red colour, having dark striæ or folds running through it. After immersion in spirits, these striæ assumed a yellow colour, and the internal membrane could with delicacy be lifted up from the substance of the corpus luteum." If Dr. Lee denies the appearance of an internal membrane and striæ in this body, I could then understand him; but to declare this to be a clot of blood, and then omit the entire description of the section of it, in which alone the mention is made of an internal membrane and striæ, appears to

savour too much of wilful omission to be misunderstood. "My conscientious belief is," says Dr. Lee, "that this woman died during menstruation. I have so often seen all the appearances here described in the ovaria and uterus of women who have never been pregnant, that I have no doubt of the fact."

Something more than a simple statement of this kind would be required to convince me that women, in whom such appearances (ovarian and uterine) as have been described above were present, had not conceived. I have had many opportunities, as well as Dr. Lee, of examining the uterus and ovaries of women dying during menstruation, but I never saw such appearances as the above; I never saw a clot of blood with an internal membrane and striæ running through it; nor will I ever see a body in the ovary of a female, married or unmarried, and presenting the characters as described above, without concluding that that woman has conceived, and that it is a true corpus luteum in her ovary.

"But," says Dr. Lee, "the character of this corpus luteum is in truth gone for ever; far more effectually blasted than the reputation of the poor lamplighter's murdered wife."

The zeal which Dr. Lee has shown as the champion of this lamplighter's wife deserves a better cause. I can only state, in answer to the above, that the preparation has been seen by Professors Thompson, Reid, Simpson, as well as many other professional men who have made this subject their peculiar study, and that its true nature was never before doubted. In order, however, to be able to state Dr. Allen Thompson's opinion, in whose possession the preparation is, I requested him to state his opinion regarding it, to which request I received the following note.

80, George's Street,
7th January, 1843.

My dear sir,

I have just examined the corpus luteum in the preparation taken from the lamplighter's wife, and I am confident that the peculiar structure usually regarded as characteristic

of the true corpus luteum is so well marked in it, that it would be impossible for any one to confound it with a mere clot of blood, or to distinguish it from the true corpus luteum found in the ovary of a gravid uterus.

(Signed) ALLEN THOMPSON.

Dr. Robert Paterson.

Secondly, the true state of the corpus luteum of fig. 4; in fact, whether or not it presented a central cavity. Dr. Lee seems still to have doubts regarding this, but Dr. Reid's words (in whose possession the preparation is) are sufficiently precise. "The yellow plicated structure," says Dr. Reid, "was confined to the circumference, forming a kind of sac, the centre of which was completely occupied by a reddish, grey coloured, fibrous mass."

Lastly, Dr. Lee considers the testimony of the decidua as worthless. "The utter worthlessness of the decidua," says he, "as a test of pregnancy, will be estimated by a quotation from Dr. Blundell's lectures, and also the real value of the microscopical researches determined, which have led to the revival of an antiquated and exploded error, viz. that the decidua is nothing but the altered mucous membrane of the uterus."

I must leave Dr. Lee's opinion regarding the utter worthlessness of the decidua as a test of pregnancy, to those who have made it their especial study. I can only state that I am satisfied, from personal observation, of the correctness of the views taken by Dr. Sharpey and others, and consider it the only means of distinguishing the decidua in its early state.

I am sorry to have considered it necessary to differ from Dr. Lee regarding so many points of this subject, but as I had (in my paper on the corpus luteum) made a simple record of facts, which can only be considered of value if properly established, it became a matter of duty to myself and the profession, as well as the very respectable journal in which my observations appeared.

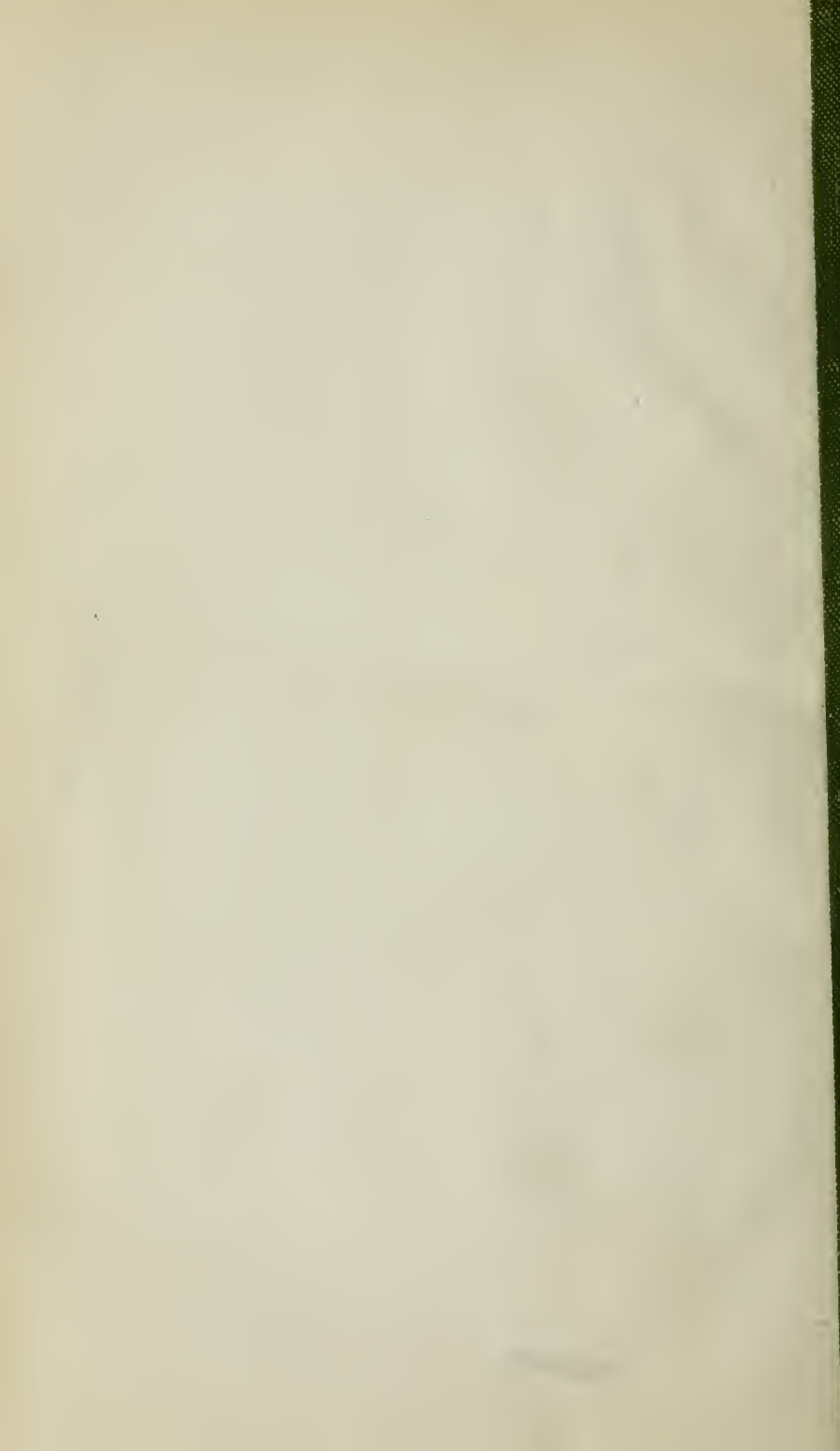
I am, sir,

Your most obedient servant,

ROBERT PATERSON, M.D. &c.

Leith, 7th January, 1843.





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